Adolescents' attachment style with parents and conflict management with parents and best friend: An investigation of longitudinal associations and two mediational processes

Clairneige Motzoi

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By: Ms. Clairneige Motzoi

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Signed by the final examining committee:

Dr. C. Kalman (Physics)	Chair
Dr. W. Andrew Collins	External Examiner
Dr. Hilary Rose	External to Program
Dr. Dorothy Markiewicz	Examiner
Dr. William Bukowski	Examiner
Dr. Anna Beth Doyle	Thesis Supervisor

Approved by

_____

Chair of Department or Graduate Program Director

September 6, 2011 _____

Dean of Faculty

ABSTRACT

Adolescents' attachment style with parents and conflict management with parents and best friend: An investigation of longitudinal associations and two mediational processes

Clairneige Motzoi, Ph.D.
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The current dissertation examined the relation between attachment with each parent and conflict management with parents and close friends across adolescence. Adolescents (n = 205, M = 13 years, SD = 1.30 at T1) answered questionnaires assessing anxious and avoidant attachment with each parent (at ages 13, 15, and 17) and others in general (age 14), and conflict management with mother, father, and best friend (ages 15 and 17). Study 1 investigated the relation between attachment and conflict management with parents from age 15 to 17. Results indicated that the more adolescents were anxiously or avoidantly attached to their mother, the less they collaborated with her over time. Similar findings for avoidant attachment with father were for girls only. The more adolescents were avoidantly attached to their parents, the more they avoided conflict with them over time. Bidirectional relations were found for avoidant attachment and collaboration, as well as for attachment and conflict avoidance with father.

Study 2 examined the relation between adolescents' attachment with each parent at age 13 and conflict management with best friends three years later, testing two mediators for this relation, attachment with others in general and conflict management with each parent. The more adolescents were avoidantly attached with their parents, the less they collaborated with their best friend. This relation was fully mediated by avoidant attachment with others in general and collaboration with father, and, for girls only by collaboration with mother. The more boys were anxiously attached with their parents, the less they collaborated and the more they avoided conflict or used stalemate with their best

friends. The relation between anxious attachment with *mother* and collaboration tended to be mediated by general anxious attachment, whereas the relation between boys' anxious attachment with *father* and the use of negative conflict behaviours with friends was mediated by the use of those same conflict strategies with their fathers. Thus, anxious attachment with mother impacted boys' positive conflict behaviours with friends by generalizing to close others, whereas anxious attachment with father impacted their use of negative conflict behaviours through the practice of these behaviours with father.

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The dissertation comprises of two manuscripts:

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The data for these studies were taken from a larger longitudinal study of parenting, adolescent attachment and adjustment, the Relationships and Well-Being Project, headed by Drs. Doyle and Markiewicz. I contributed to the data collections at 4 of the 5 time points used for the dissertation. I designed and conducted all the data analyses and conceptualized and wrote both manuscripts. The internal thesis committee is composed of Dr. Anna Beth Doyle, my thesis supervisor, and Dr. Dorothy Markiewicz and Dr. William Bukowski. Dr. Doyle supervised all aspects of the thesis and served in an advisory capacity in the formulations of research questions and drafts of the dissertation. Drs. Markiewicz and Bukowski offered helpful comments and revisions to the drafts of the dissertation. Dr. Bukowski also offered guidance with respect to the statistical analysis. I completed the revisions of the drafts of the manuscripts, based on the comments of my advisors.

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General Introduction

Conflict management is a significant inevitably occurring feature of the quality of close relationships. A remarkable aspect of conflict management is its potential to affect relationships themselves, through the many different patterns of behaviour during conflict and the way these are viewed by the parties involved. That is, through repeated experiences of successful conflict management, where both parties find their problems resolved at least partially, trust within and positive appraisals of the relationship likely ensue. Conversely, repeated experiences of aggressive exchanges or attempts at domination by one party have the potential to lead to distrust of the other and negative appraisals of the relationship itself. Indeed, the ability to resolve conflict is paramount for the maintenance of close relationships (Montemayor, 1983). As such, an important area of study is the examination of potential contributing factors to conflict management behaviours.

The current dissertation examines adolescents' attachment security with parents as a contributing factor in conflict management behaviours within their relationship with mother, father, and best friend. Specifically, Study 1 investigates the association between attachment and change in conflict management with each parent over two years, thus examining whether attachment with parents predicts the development of various conflict management styles within the relationships with mother and father separately. Only a few studies have previously examined the relation between adolescents' attachment to parents and conflict management with them (e.g., Ducharme, Doyle, & Markiewicz, 2002; Kobak et al., 1993), and these studies were not longitudinal in nature. Most other studies involving adolescents have examined the relation between attachment style with others in

general and conflict management with romantic partners. In addition to broadening previous findings longitudinally and by examining each parent separately, Study 1 explores whether conflict management impacts the development of attachment insecurity with parents over two years. Such an investigation is important given the continuing requests to community mental health centres to address adolescent-parent relationship problems, where parents and adolescents continue to seek help for this issue, and given the finding that conflict with parents is associated with higher symptomatology in adolescents (Ge, Lorenz, Conger, Elder, & Simons, 1994; Greenberger & Chen, 1996; Greenberger, Chen, Tally, & Dong, 2000).

Study 2 examines the association between attachment with parents in early adolescence and conflict management with best friend three years later. This second study also investigates two processes by which attachment with parents might impact conflict resolution with friends. That is, two mediational models are tested: one in which attachment style with others in general mediates the relation between attachment with parents and conflict management with friends, and one in which conflict resolution with parents is the mediator. The first mediational hypothesis is based on a premise of attachment theory, rarely explicitly tested, that attachment to parents generalizes to others through internal working models, and that these models in turn impact on social abilities with others (see Study 2 for more detail). As hypothesized in Study 1, adolescents' attachment style with parents also likely impacts their conflict management with parents, through the adolescents' internal working models and/or their ability to regulate emotion (see Study 1 for more detail). Thus, the first mediational hypothesis is compared with the second, which posits that attachment with parents impacts how adolescents manage

conflict with their parents, and that these behaviours are then practiced and later used with best friends.

Attachment and conflict resolution: Theoretical background

Basic to both studies is the hypothesis that attachment security with parents is important for the development of conflict resolution skills. This hypothesis is part of the larger hypothesis of attachment theory, that attachment security with parents leads to the development of social competence (Bowlby, 1979). Indeed, attachment security has been positively associated with various indices of social competence, including adolescents' communication abilities in close relationships and the quality of their friendships (Kerns, 1996; Sroufe, 2005). The posited relation between attachment and conflict management would be explained through two mechanisms: the internal working models (IWMs), and the ability to regulate emotion effectively (Bowlby, 1979). Both emotion regulation and positive IWMs of self as worthy and of others as available and trustworthy would be theoretically formed by consistently supportive and responsive caregiving by parents and would later foster thoughts, emotions, and emotion regulation behaviours that would engender cooperation during conflict and constructive discussion of the problem.

Both Study 1 and 2 discuss this theoretical background in more detail, and identify empirical studies supporting these claims. In the case of emotion regulation, Creasey and Hesson-McInnis (2001) found that the relation between late adolescents' insecure attachment in close relationships in general and negativity/escalation observed during conflict with a romantic partner was partially mediated by anger and sadness and lower emotional confidence. In addition, Corcoran and Mallinckrodt (2000) found that the relation between adults' attachment security with close others in general and self-

reported conflict management in romantic relationships was mediated by one's view of one's own socially efficacy. Thus, although internal working models and various ways of coping with negative emotions have not been explicitly examined as mediators, similar constructs such as confidence in how one regulates emotion and one's view of one's own socially efficacy have been found to partially explain the link between attachment and conflict resolution, at least within romantic relationships.

The current dissertation examines the differential effects of anxious and avoidant attachment on conflict resolution. Presumably, emotion regulation is affected in both types of insecure attachment. Both types of insecure attachment have been associated with less confidence in one's ability to regulate emotion (e.g., Creasey, Kershaw, & Boston, 1999). Furthermore, whereas adolescents with more anxious and avoidant attachment have been shown to show more anger during conflict, only anxiously attached adolescents experience more sadness and fear during conflict than secure adolescents (Creasey & Hesson-McInnis, 2001; Kobak et al., 1993)

Conflict resolution strategies

Conflict resolution strategies have been divided into constructive and destructive strategies (Gottman, 1994; Kerig, 1996; Oetzel, 1998; Pruitt & Rubin, 1999; Putnam, 1986; Vuchinich, 1990). Constructive conflict resolution, often termed cooperation, compromise, negotiation, or consensus, involve the resolution of conflict where a solution is reached and the goals of both conflict partners are met, at least in part. According to the cognitive-developmental model, the more constructive conflict resolution strategies, such as cooperation or compromise, require more mature reasoning

and other cognitive tasks such as perspective-taking than other conflict strategies (Selman, 1981; Smetana, 1988).

In contrast, destructive conflict management involve strategies that end the conflict by meeting only one of the parties' goals or the goals of neither party. Examples of such conflict management strategies include disengaging from the conflict, by either avoiding or withdrawing from the discussion, (Kerig, 1996; Laursen, 1993a, Vuchinich, 1990). Similarly, stalemate involves engaging in sulking, bickering, and giving the silent treatment, behaviours that express disagreement without aiming to find a common solution (Kerig, 1996). In a stand-off or stalemate, where both parties stick to their positions, the conflict also ends without finding a solution (Kerig, 1996; Laursen 1993a, Vuchinich, 1990). Alternatively, mutual resolution does not entail because one person continues to assert his or her point of view until the conflict partner submits to his or her will (Laursen, 1993a). That is, one person resolves the conflict through power assertion while his or her conflict partner resolves the conflict through submission. Lastly, destructive conflict management strategies can take the form of a more damaging interaction, where one party asserts his power through physical or verbal aggression, including yelling, harsh criticism, contempt, or provocative questioning of the conflict partner's power (Gottman, 1994; Kerig, 1996).

Normative conflict management in adolescence

Adolescents engage in an average of seven disagreements a day within various close relationships in their lives, including family members, close friends, and romantic partners (Laursen, 1993b; 1995). They average one disagreement per hour with their mothers, one every two hours with their romantic partners, and one every six hours with

their friends (Laursen, 1995). In a meta-analysis of 37 studies, conflict frequency between adolescents and their parents was found to decrease from early to late adolescence, whereas negative affect expression increased from early to mid-adolescence, and then remained stable until late adolescence (Laursen, Coy, & Collins, 1998).

In a meta-analysis examining published studies on adolescents' conflict management with others in general, Laursen (1993a) found that approximately 40% of arguments are settled by disengagement (stand-off or withdrawal), 37% by submission, and only 23% by compromise. Thus, compromise is the least used conflict resolution strategy in adolescence, although it increases with age (Levya & Furth, 1986). With parents specifically however, results of Laursen's (1993a) meta-analysis of 12 studies indicated that adolescents resolved disagreements with their parents most often by submitting to their parents, followed by disengaging from the argument, and least often by negotiating. With close peers (i.e., close friends and romantic partners), adolescents were found to engage in negotiation more frequently than submission or disengagement (Laursen 1993a).

Thus, adolescents negotiate with their close peers more often than with their parents and submit more to their parents than to their close peers (Laursen, 1993a; Laursen, Hartup, & Koplas, 1996). These differences in behaviour are likely due to the relational context. That is, parental relationships are stable, involuntary, and temporally continuous relationships that are not easily disrupted (Collins & Laursen, 1992). Furthermore, they involve authority, whereas close friendships are horizontal affiliations that are not necessarily temporally continuous and can be terminated, and where both

parties theoretically have equal power (Youniss & Smollar, 1985). In friendships, adolescents likely select conflict management strategies with their close friends that decrease the risk of termination of the relationship and support the equity in the relationship (Laursen, 1993a; Laursen, Hartup, & Koplas, 1996). In the relationship with parents, adolescents likely submit and withdraw from the conflict most often due to the authority inherent in such relationships. Indeed, Levya and Furth (1986) found that adolescents were more likely to select compromise as a response to hypothetical conflict situations in peer rather than authority contexts.

Dissertation Study 1& 2

The main purpose of Study 1 is to examine the longitudinal relation between adolescents' attachment security and conflict management with parents over two years. The aim is to investigate whether attachment security with each parent at age 15 predicts the development of collaboration with parents over two years, and whether attachment insecurity is associated with the development of more destructive conflict management styles, as would be predicted by attachment theory. Furthermore, Study 1 allows for the examination of whether conflict resolution strategies with each parent at age 15 predict changes in attachment security over time.

Study 2 is partially based on the premise that attachment to parents is associated with conflict management with parents. Its main purpose is to examine whether attachment with parents at age 13 is associated with various conflict management styles with best friend four years later. More importantly, the processes by which this association occurs is also tested. That is, two mediational hypotheses are posited. The first is based on a basic premise of attachment theory (Bowlby, 1979), that attachment style with parents generalizes to other relationships, and that this attachment security in

relationships in general sets the stage for more socially competent interactions in friendships and romantic partners. Indeed, most studies investigating the relation between attachment and conflict management have used measures of attachment style with close others in general (e.g., Bippus & Rollin, 2003; Corcoran & Mallinckrodt, 2000; Creasey, Kershaw & Boston, 1999; Creasey & Hesson-McInnis, 2001). The current dissertation's Study 2 investigates whether attachment to others in general mediates the longitudinal relation between attachment with parents and conflict management with close friends. The second mediational hypothesis is based on the concept of cognitive and experiential learning. That is, the use of a given conflict management strategy with parents mediates the relation between attachment style with parents and the use of the same conflict management strategy with close friends. In other words, in this hypothesis, adolescents' attachment style with parents set the stage for certain conflict management styles with parents, which then become practiced and learned in the context of the relationship with parents and then are used with friends as well.

Both studies add to the current literature on attachment and conflict management by examining attachment anxiety and avoidance with mother and father separately, rather than attachment style with others in general, or state of mind with respect to early attachment experiences as measured by the Adult Attachment Interview. Thus, the contributions of attachment with parents in adolescence, including specific type of insecurity, are specifically identified, and the contribution of each parent is examined separately. Furthermore, both studies examine the role of adolescent gender in the posited associations between attachment and conflict management, and in the mediational processes described above, thereby allowing the investigation of whether attachment to

mothers and fathers impact on adolescents' conflict management abilities differently for boys and girls, and whether one mediational hypothesis is better suited for either gender.

Three conflict management styles are investigated: collaboration, conflict avoidance, and stalemate. The current dissertation contributes further to the literature in part by examining the relation between attachment with parents and stalemate, a relation not yet examined in adolescence. Although collaboration and conflict avoidance have been studied often in the past, the longitudinal nature of this dissertation also adds to the current literature regarding attachment and these two conflict styles by going beyond their concurrent associations, testing the directionality of the hypotheses explicitly in Study 1, as explained earlier, and by examining the potential contribution of attachment to parents in early adolescence on conflict management with friends, in mid-adolescence in Study 2.

Abstract

Adolescents' Attachment and Conflict Management Style with Parents:

A Two-year Longitudinal Study

The present study examined the development of adolescents' conflict management style with their mother and father in relation to attachment style with each parent. Two hundred and five adolescent boys and girls filled out questionnaires assessing attachment dimensions of anxiety and avoidance and conflict management with mother and father separately at Time 1 (M = 14.79, SD = .67) and again two years later. Results indicated that the more early adolescents were anxiously or avoidantly attached to mother, the less they collaborated with her over time. Furthermore, the latter association was bidirectional, with early collaboration with mother also associated with a decrease in attachment avoidance with mother. For girls only, a similar bidirectional relationship between developmental changes in attachment avoidance and collaboration was found for their relationship with their father. The more adolescents were avoidantly attached with their mothers and fathers at T1, the more they avoided conflict with them over time. An increase in avoidant attachment with father was predicted from both earlier conflict avoidance and use of stalemate.

Adolescents' Attachment and Conflict Management Style with Parents:

A Two-year Longitudinal Study

Although the view that adolescence is a period of storm and stress has been convincingly dismissed, with evidence that only a minority of families consistently experiencing serious levels of conflict (Montemayor, 1983; Montemayor, 1986), adolescent-parent conflict remains an important motive for seeking help in community mental health clinics and is associated with higher levels of clinical symptomatology (Ge, Lorenz, Conger, & Elder, 1994; Greenberger & Chen, 1996; Greenberger, Chen, Tally, & Dong, 2000). Thus, an important area of investigation is the potential precursors for constructive conflict resolution in parent-adolescent relationships. The present study examines the association between one such potential precursor, attachment security with parents, and change in conflict management strategies over two years.

Normative Conflict Resolution in Adolescence

Conflict has been theorized to serve important functions in adolescence. One such function has been to help adolescents learn to balance the competing goals of relatedness and autonomy. Indeed, autonomy striving (i.e., disagreements regarding what one does or where one goes) accounts for between 15 to 48% of mother-adolescent conflict and is the second most common disagreement subject between mothers and adolescents (Gehring, Wentzel, Feldman, & Munson, 1990; Laursen, 1995). When such conflict arises, adolescents must optimally learn to negotiate the autonomy they are seeking while maintaining a positive and trusting relationship with their parents. Another function of adolescent-parent conflict might be to learn to balance one's own needs and wishes with those of the conflict partner. Given that adolescents and parents often have conflicting

primary concerns (e.g., social inclusion *vs.* safety), adolescent-parent conflict would be particularly suited for this type of learning. In this view, the ultimate goal would be to learn to resolve conflict constructively and fairly, using strategies such as compromise and negotiation. Indeed, resolving conflicts constructively is paramount for the maintenance of positive relationships, including beyond the family in the realms of romantic relationships and work. Learning conflict management in the family might ultimately help adolescents transition to appropriate roles in these other realms (Laursen, Coy, & Collins, 1998; Montemayor, 1983).

Disagreements are a normative part of adolescent daily existence, with the majority of conflicts occurring with their mothers, at the rate of approximately one an hour (Laursen, 1993; Laursen 1995). Various conflict resolution strategies have been proposed and investigated, often divided into constructive and destructive strategies (Gottman, 1994; Oetzel, 1998; Pruitt & Rubin, 1999; Putnam, 1986; Vuchinich, 1990). Collaboration, compromise/negotiation, and consensus are types of constructive conflict resolution in which a solution is reached that meets some or all of the goals of both parties. In contrast, destructive conflict management involves ending the conflict by reaching only one of the parties' goals or neither of their goals, for example by disengaging from the conflict, by either avoiding or withdrawing from the discussion (Kerig, 1996; Laursen, 1993, Vuchinich, 1990), or by stalemate, that is, behaviours such as sulking, giving the silence treatment, or bickering without getting anywhere (Kerig, 1996).

Constructive conflict resolution strategies such as cooperation are considered more sophisticated, necessitating more mature reasoning, appropriate assertiveness, and

perspective-taking (Selman, 1981; Smetana, 1988). Indeed, cooperation is used by adolescents increasingly with age (Levya & Furth, 1986), although less often than other strategies. In a meta-analysis conducted by Laursen (1993), it was found that middle adolescents resolved disagreements with their parents most often by submitting, followed by disengagement from the argument, and then negotiation. The more frequent use of submission and disengagement might reflect adolescents' immaturity, as well as the fact that they are in conflict with an authority figure. Thus, an important question is: what conditions would lead adolescents to use negotiation more with their parents, given their inherent immaturity and dependence on their parents? Although precursors of differing *amounts* of conflict have been examined thoroughly in the literature, less attention has been given to the predictors of different types of conflict resolution strategies. Given that conflict involves interpretations of the conflict partner's position, as well as expectations about one's own abilities and the intentions of others, attachment security has been proposed as an important predictor of the use of constructive and destructive conflict management strategies.

Attachment style and conflict management

Attachment security has been positively associated with social competence, including friendship quality and communication in adolescent relationships (Bell, Avery, Jenkins, Feld, & Schoenrock, 1985; Kerns, 1996; Sroufe, 2005). According to attachment theory, these associations could be explained through the adolescents' working models of self and other (Bowlby, 1979). Children experiencing a consistently supportive and responsive relationship with a parent develop a view of themselves as valued and worthy and a view of their parent as available and trustworthy. These beliefs and expectations

about their parents and themselves in relation to their parents would then impact on their motivation to use different conflict strategies with them.

More securely attached adolescents, having experienced a consistently responsive relationship with a parent are more likely to expect that their point of view will be taken into consideration during conflict, and therefore would be more likely to state their perspective. Such adolescents would also be more likely to have a positive relationship with their parent, providing motivation to act in such a way as to maintain the mutual trust in the relationship. Ultimately such views would provide important motivation to resolve the conflict constructively, balancing one's wishes with those of the parent. In contrast, adolescents who have internal representations of the parent as unresponsive and untrustworthy are likely to expect the parent to be unresponsive or unsupportive in the conflict situation, in turn increasing the potential feelings of anger and decreasing the motivation to resolve the conflict in a fair and mutually beneficial manner.

In addition to the motivation to assert oneself and to respond to the parent's point of view, constructive conflict resolution also necessitates the ability to regulate emotion effectively. Cooperation during a disagreement is a complex task that requires cognitive-emotional multi-tasking. Attachment theory posits that persons securely attached to parents have learned to regulate emotion through the consistent responsiveness to their emotional need by their caregivers (Bowlby, 1979). Indeed, children's attachment security has been associated with better regulation of emotion in classrooms, more constructive coping with negative emotions, more flexible adjustment of emotional expression and impulses in the context of situational changes (Kerns, Abraham, Schlegelmilch, & Morgan, 2007; Sroufe, 2005). Furthermore, secure attachment to

mother has been positively associated with adolescents' expression of emotion in a diary (Ducharme, Doyle, & Markiewicz, 2002). Secure adolescents have likely learned that expressing negative emotion is acceptable within the relationship with their parent, and how this relationship, through affection and communication, can have the power to soothe.

In contrast, insecure adolescents might have particular difficulty dealing with the distress that occurs during a conflict with a parent. Insecure adolescents might interpret such conflict more negatively, thus experiencing more distress, and would have particular difficulty utilizing a relationship they do not trust to reduce their distress. Indeed, anxiously attached adolescents have been reported to experience more anger, sadness, and fear during conflict (Collins, 1996; Creasy & Hesson-McInnis, 2001). In adults, both attachment anxiety and avoidance have been associated with alterations in the hippocampus, known to be associated with emotion regulation abilities (Quirin, Gillath, Pruessner, & Eggert, 2010). Furthermore, adults' attachment avoidance has been associated with higher skin conductance reactivity when presented with interpersonal and non-interpersonal stressors (Diamond, Hicks, & Otter-Henderson, 2006) and higher production of the inter-leukin-6 (proinflammatory cytokines associated with the development of a number of diseases such as cardiovascular disorders, osteoporosis, and certain cancers) during discussion of a marital disagreement (Gouin et al., 2009).

Attachment style has also been shown to be associated with the differential use of conflict management strategies. Anxious and avoidant attachment have been found to be associated with less compromising and more avoiding or withdrawing from conflict and negativity/escalation during conflict with romantic partner for both adolescents and adults

(Corocan & Mallinckrodt, 2000; Creasy & Hesson-McInnis, 2001; Creasy, Kershaw, & Boston, 1999). Fewer studies have investigated the relation between attachment and conflict resolution with parents. One such study found that secure 14-18 year olds maintained more balanced assertiveness, avoided conflict less, and became inappropriately angry less than dismissing adolescents during a problem-solving task with their mother (Kobak et al., 1993). Similarly, a study of 150 early adolescents found that adolescents secure in their relationship with parents used less disengagement and tended to use more negotiation/ compromise with their parents, as compared to dismissing adolescents (Ducharme, Doyle, & Markiewicz, 2002).

Directionality of the relation between attachment and conflict management

Although a relation has been found between attachment with parents and conflict management with parents, the data of the above-mentioned studies were collected at the same time point. In order to assess whether attachment style indeed contributes to conflict resolution, longitudinal studies are needed. Although it is most likely that internalized attachment beliefs affect how one responds to conflict with parents, it is plausible that one's own responses to such conflict also bring about or exacerbate beliefs about the relationship. That is, one's own ineffective responses to conflict with the parent could contribute to the maintenance of dysfunctional dynamics with parents and serve to reinforce one's discomfort with intimacy or one's worry about the availability of parents. Moreover, it could be that adolescents' attachment style with parents and their own responses to conflict with parents are mutually reinforcing. Thus, the present study examines attachment style and conflict resolution with parents longitudinally over two years in order to assess the directionality of effects.

Although the prediction of attachment from conflict management has not been explicitly investigated in previous research, there is ample research suggesting that attachment is moderately stable from late childhood across adolescence (Allen, McElhaney, Kuperminc, & Jodl, 2004; Ammaniti, van IJzendoorn, Speranza, & Tambelli, 2000; Scharfe & Cole, 2006). For example, attachment security at age 15 (measured with the AAI) accounted for 37% of the variance in attachment security three years later (Allen, McElhaney, Kuperminc, & Jodl, 2004). Bowlby (1979) suggested that attachment security is internalized through internal working models that later influence interpretations of events and trigger behaviour, and that these interpretations and behaviour then further maintain the existing attachment strategies. However, he also asserted that attachment representations were revised with different experiences along one's developmental pathway, especially experiences within close relationships. In a meta-analysis of longitudinal studies examining the stability of the attachment security-insecurity dimension in childhood, Fraley (2002) found that attachment at age one predicted 10% of the variance in attachment at age 1.5, 12% at age 4, 45 % at age 6, and 7% at age 19. Furthermore, he compared two hypothetical models, using dynamic linear equations: the prototype model, in which early attachment representations remain stable and influence attachment behaviour throughout life, *versus* the revisionist model, in which new experiences change early attachment representations, thereby affecting the stability of attachment. The data fit the prototype model best. Similarly, Fraley, Vicary, Brumbaugh, & Roisman (2011) found that when adults' self-reported attachment (using their Experiences in Close Relationships – Relationship Structures questionnaire assessing attachment anxiety and avoidance in the relationships with mother, father, and

romantic partner) was measured both daily over a 30-day period and weekly over a year, the patterns of stability were also most consistent with a prototype model, and that the Big Five personality traits did not account for the stability in attachment. Stability was highest for attachment to parents, and lowest for attachment to romantic partner. In addition, Fraley (2002) found that samples with more family risk factors, such as marital conflict and abuse, had less attachment stability than those with less risk factors, and that although the prototype model continued to fit best even for the higher risk group, environmental risks seemed to reduce the degree to which children would be able to exert influence on their environment by eliciting behaviours consistent with their attachment-related expectations.

In addition to environmental risk, change in attachment has been associated with a number of different factors. For example, Allen and his colleagues (2003) found that maternal attachment status, a variable known to be associated with infant attachment style, was only weakly related to child attachment in middle to late adolescence, and that this relation was mediated by current qualities of parent-adolescent interactions. Furthermore, Allen and colleagues (2004) found that enmeshed behaviours and the adolescents' tendency to focus their arguments on personal characteristics rather than on reasons behind their arguments during a revealed differences task with their mothers were associated with a decrease in attachment security over two years. Thus, Allen and colleagues (2004) suggested that what might be more important for changes in adolescent attachment with parents is the concurrent quality of parent-adolescent interactions. Conflict management with parents could be one of a number of markers for relationship quality and a possible predictor of change in attachment. It is therefore important to

assess directionality of effect between attachment and conflict resolution strategies with parents.

Gender of adolescents and parents

In addition to addressing the question of directionality in the association between attachment and conflict management with parents, the present study also adds to existing findings by examining this association with mothers and fathers separately and comparing adolescent boys and girls. Previous gender-related findings with respect to the association between attachment and conflict have differed. For example, whereas adolescents secure with both parents used less disengagement with them than dismissing adolescents, adolescents secure with mothers, but not fathers, tended to use more negotiation/compromise than dismissing adolescents (Ducharme, Doyle, & Markiewicz, 2002). Other studies have found adolescent gender differences as well. For example, whereas secure attachment with both parents was associated with positive conflict resolution within friendships for girls, only attachment with mother was predictive for boys (Dwyer et al., 2010). Furthermore, other studies indicate that the same-gender parent might be more important in the development of social skills. For example, stereotypically masculine traits such as assertiveness, independence, and decisiveness have been associated with attachment with father for boys, but with attachment with both parents for girls (Kenny & Gallagher, 2002). Similarly, attachment to both parents was equally predictive of social adjustment and efficacy for female university students, whereas attachment to father was a stronger predictor than attachment to mother for males (Rice, Cunningham, & Young, 1997). Given these differing findings with respect

to parent and adolescent gender, the current study aims to elucidate the differential predictions of attachment with mother *vs.* father for boys *vs.* girls.

Dimensional measurement of attachment

Although some of the studies examining attachment and conflict management among adolescents have used dimensional measures of attachment derived from self-report questionnaires (e.g., Creasey & Hesson-McInnis, 2001), others have used categorical self-report questionnaires (Ducharme, Doyle, & Markiewicz, 2002) or the categorical scoring associated with the AAI (Creasey & Ladd, 2004, 2005), and yet others have used dimensional scales derived from the AAI (Kobak et al., 1993). Only a trivial to small overlap between self-report measures of attachment and AAI security has been found, with small associations between self-reported attachment anxiety and AAI unresolved status, as well as between self-reported attachment avoidance and dismissing discourse in the AAI (Roisman et al., 2007). Interview and self-report measures of attachment sometimes show expected associations with other measures, and are at times shown to predict different personality traits or aspects of romantic relationship functioning (Roisman et al., 2007; Shaver & Mikulincer, 2004).

In the current study, two self-reported dimensions of attachment insecurity with each parent are examined: attachment avoidance, reflecting discomfort with emotional closeness to the parent, and attachment anxiety, reflecting worry about the emotional availability of the parent when needed. Indeed, these two relatively independent dimensions, present in early attachment theory (e.g., Ainsworth, Blehar, Waters, and Wall, 1978), were identified by Brennan, Clark, and Shaver (1998) through a factor analysis of all self-report attachment scales for adolescents and adults available at the

time. Brennan and colleagues suggested that dimensional measures are preferable to categorical in order to avoid losing statistical power. Furthermore, Fraley and Spieker (2003) tested whether the Strange Situation attachment data for 1139 fifteen-month-old children were more consistent with a continuous or a categorical model. Using taxometric techniques for distinguishing latent categories *vs.* latent dimensions, they found that the attachment patterns were more consistent with dimensions. Similarly, Roisman, Fraley, & Belsky (2007) conducted a taxometric analysis of the scales used to make AAI classifications, finding that the variation underlying secure to dismissing states of mind were also more consistent with dimensions.

Hypotheses

In the present study, both attachment anxiety and attachment avoidance with parents were hypothesized to predict a decrease in collaboration with either parent over two years. Discomfort with emotional closeness in particular would presumably make intimate discussion of conflict topics uncomfortable as well. Thus, it was hypothesized that the more adolescents were avoidantly attached to a parent, the more they would also avoid conflict with that parent over time. Anxiety about whether a parent will be available or rejecting might make conflict particularly threatening. Given the association between anxious attachment and anger or fear (Collins, 1996; Creasy & Hesson-McInnis, 2001), the third hypothesis was that the more adolescents are anxiously attached to a parent, the more they would use ineffective conflict strategies, such as stalemate, as shown by responding ambivalently, by sulking, bickering without aim, and withdrawing affection, over two years.

With respect to parent and adolescent gender, some researchers have suggested that the relationship with the same-gender parent might be more important in adolescence due to the increased emphasis on male-female roles as compared to childhood (Kerns & Stevens, 1996). Indeed, studies examining attachment and general social competence find that attachment with father is more predictive for boys, whereas both parents are important for girls (Kenny & Gallagher, 2002; Rice, Cunningham & Young, 1997). Nevertheless, the few existing studies looking at attachment and conflict *within the relationship with parents* do not support this contention (Ducharme, Doyle, & Markiewicz, 2002). Given the paucity of research examining the moderating role of gender in the relation between attachment and conflict with parents, and the differing gender-related findings with respect to social competence more broadly reviewed above, studies should investigate whether different models are needed for boys and girls. Thus, the current study examined the proposed models separately for boys and girls. Differences in the prediction of boys' and girls' attachment and conflict management within the relationship with mother *vs.* father were not specifically hypothesized and analyses were more exploratory in nature. However, it was hypothesized that, given the greater focus on relationships among adolescent girls, avoidant attachment with either parent would predict more variance in later conflict management with parents for girls than boys.

In order to address the question of the directionality of effects, the contribution of early conflict resolution strategies with parents to the change in attachment insecurity with parents over two years was also examined. The contribution of attachment to conflict management strategies was expected to be maintained, even when reverse

relations between the variables were included in the structural equation models. Furthermore, given the findings with respect to change in adolescents' attachment reviewed earlier, it was expected that earlier experiences collaborating would lead to a decline in attachment insecurity, whereas engaging in negative conflict behaviours would predict an increase in attachment insecurity.

Method

Participants

The sample for the present study consisted of 205 adolescents (52% girls) attending an English-speaking public school in a suburban area of Montreal. The adolescents were participating in a larger 6-year longitudinal study designed to examine adolescent social and emotional development, and were followed for 2 years in this study. The mean age of the sample was 14.79 (*SD* = .67) at the time of the initial evaluation T1 (hereafter rounded to 15) and 17.01 (*SD* = .91) at Time 2. Seventy-two percent of the sample came from two-parent homes, of which approximately 82.6 % were intact and 17.4% were reconstituted. Eighty-eight percent of the adolescents who lived with a single parent lived with their mother, while 12% lived with their father. Participants came from lower to middle social-economic family backgrounds, characteristic of clerical and sales workers, as obtained from the work status, occupation, and education of parents (*M* = 33.85, *SD* = 8.75; Hollingshead, 1975).

Approximately 97% of the sample had lived in Canada all their lives and 92% of the adolescents spoke English at home. Of the 66% of adolescents reporting one ethnic background, 31% considered themselves "English", 5.2% "French", 44% "Other European", 5.2% "Asian", 6.9% "South-West Asian", .9 "Middle Eastern, and 4.3%

"West Indian." Thirty nine percent of those 19% having two ethnicities reported some combination of English Canadian and French Canadian, whereas 61% reported a different combination.

Measures

Attachment Insecurity. Attachment insecurity was assessed with mother and father separately using a shortened and adapted version of the 36-item Experiences in Close Relationships questionnaire (ECR, Brennan, Clark, & Shaver, 1998). The adapted ECR (Doyle & Markiewicz, 2009), like the original, yields two scales: attachment anxiety, i.e. anxiety about the availability of the attachment figure (e.g. "I worry a lot about my relationship with my mother/father") and attachment avoidance, i.e. avoidance of emotional closeness with the attachment figure (e.g. "I don't feel comfortable opening up to my mother/father"), in this case each consisting of 12 items. These 12 items were chosen from the full18-item scales as having the highest item-scale correlations based on previous research (Doyle & Markiewicz, 2009). Items were rated on a 7-point scale. In the first year of the present study, the Cronbach's alphas for anxiety with mother, anxiety with father, avoidance with mother, and avoidance with father were, respectively, .84, .84, .92, and .91, comparable to the .91 for anxiety and .94 for avoidance with romantic partner in Brennan et al.'s original study of 1086 undergraduates. In addition to their reliability, the adapted ECR subscales have been found to be valid, as shown by the moderate correlations between the mother and father versions and a version of the ECR worded to refer to close relationships in general (Doyle & Markiewicz, 2009). As well, Brennan and colleagues found high correlations with the corresponding subscales of

other attachment measures, including those of Feeney et al.'s attachment subscales of worry and discomfort with closeness among romantic partners.

Conflict Resolution. Adolescents' use of conflict resolution strategies during conflict with their parents was assessed using a 14-item version of the Conflict and Problem-Solving Scale (CPS, adapted from Kerig, 1996). With an earlier adolescent sample (Doyle& Markiewicz, 2005), the CPS was adapted by omitting items inappropriate to adolescents, such as those relating to marital conflict, and infrequent, such as physical aggression, and by choosing items from the original based on the highest item-scale correlations. The adapted CPS yields three subscales: collaborative problem solving (5 items, e.g. "Compromise", "Talk it out with the other person"), avoidance of conflict (3 items, e.g. "Leave the room", "Try to ignore problem"), and stalemate (4 items, e.g. "Withdraw love or affection", "…give the silent treatment"). Items were rated on a 4-point scale ranging from never using the strategy in question to using it often. In the first year of the study, the Cronbach's alphas for collaboration, avoidance, and stalemate were, respectively, .87, .71, and .60 for mother and were, respectively, .75, .70, and .58 for father. These alphas increased by Time 2, with alphas of.86, .80, and .73 for mother, and .92, .83, and .76 for father. These internal consistencies are comparable for most subscales to those found in Kerig's study, where wives and husbands rated their conflict resolution tactics with their spouse. That is, in her study, coefficient alphas for collaboration, avoidance, and stalemate were, respectively, .86, .70, and .76 for wives, and .86, .74, and .78 for husbands. The discriminant validity of the subscales was also investigated. A negative correlation was found for collaboration with avoidance (r_{T1} = -.21, r_{T2} = -.38, both p <.01) and for collaboration with stalemate (r_{T1} = -.23, r_{T2} = -.24,

both p <.01) for mother. For father, collaboration was not correlated significantly with avoidance at either time, and tended to be negatively correlated with stalemate only at T1 (r = -.12, p < .10). Kerig also reported on convergent and discriminant validity, finding a positive correlation between the collaboration subscale and the Reasoning subscale of the Conflict Tactics Scale (CTS) (r = .29, p < .05), and a negative correlation between collaboration and avoidance (r = -.33, p < .001) and collaboration with stalemate (r = -.46, p < .001). In our study, avoidance and stalemate were correlated at both times for mother (r_{T1} = .58, r_{T2} = .61, both p <.01) and father (r_{T1} = .68, r_{T2} = .76, both p <.01), slightly higher than the correlations reported by Kerig for wives and husbands (r = .49, r = .43, p < .001).

Social Desirability. A 15-item true-or-false version of the Marlowe-Crowne Social Desirability Scale (Strahan & Gerbasi, 1972) was used to assess the tendency to project favorable images of oneself and to control for defensive responding (Lobel & Teiber, 1994). The Cronbach's alpha of the scale was .72, comparable to the original reliability coefficients in Strahan and Gerbasi's study, which ranged from .73 to .83. The shortened version used in the present study correlates highly with the original scale (r = .90, Strahan & Gerbasi).

Procedure

Permission to carry out the study was obtained from the local school board at the beginning of the larger longitudinal study and from the school principal each year of the study. Participants were recruited by visiting classrooms, describing the study, and providing a letter describing the study and a consent form. Written consent for

participation was obtained from the adolescents, and from their parents if the adolescent was younger than 14. Those who returned a valid consent form were entered in a draw to win music or movie gift certificates and those who participated were entered in a prize draw. The current study data was taken from the third and fifth years of the larger longitudinal study. Eighty percent of the original sample consented to participate in the first year of the current study, whereas 10% declined participation, and 10% had left the school. At Time 2 of the current study, the consent rate was 71% of the original sample, with 14% refusing to participate. Forty-two percent of the sample was in Grade 11 at Time 2, 6% were in Grade 10, and 52% had left the school for college or vocational or other pursuits. The participants completed questionnaires in groups of up to 20 students during two testing sessions, one in the fall and one in the winter of the school year. At the end of these sessions, the students were given a small chocolate and asked to indicate if they wished to be contacted by the school psychologist and/or to speak with a member of the research team. This procedure was repeated one year later, and two years later, in order to observe change in the measures given over two years. In the last year of the study, participants who had graduated from high school were contacted by telephone, mail, and email to invite them to participate. Those consenting were provided online questionnaires by sending them a link, or mailed questionnaires, using similar incentive and debriefing procedures as described above.

Results

Missing Data Analyses

Completed questionnaires were checked for randomness or non-meaningful patterns in responses (e.g., systematic patterns inconsistent with reverse coding of some items). The scale scores for participants with such patterns in responses were defined as missing. Therefore, missing data in the current study reflected either repeated absences (13 to 21%) or having answered randomly or with a pattern (1.5% of sample). The MCAR test (Little, 1988) indicated that the data were not missing completely at random (χ^2 (df) = 1169.51 (1074), $p < .05$).

Multiple Imputation for Missing Data

Multiple imputation was conducted using the *Amelia II* Program (Honaker, King, & Blackwell, 2006-2008; King, Honaker, Joseph, & Scheve, 2001), which implements an algorithm called *EMis* to impute missing data based on the existing study data. This method of handling missing data was selected over listwise/pairwise deletion or mean substitution in order to avoid the underestimation of variability or biased parameter estimates inherent in such other methods (McKnight, McKnight, Sidani, & Figueredo, 2007). The imputation model included all the variables of the current study, including all other available time points taken from the larger longitudinal study (e.g., attachment with mother and father at Time 1 to 5 of the larger study), as well as demographic variables. Rubin's (1987) formula

$$(1 + \gamma / m)^{-1}$$

estimates the efficiency of an estimate based on m imputations and the fraction of missing data γ. In the current study, twenty "completed" data sets were created by imputation,

which were then aggregated using the Aggregate function of SPSS. Based on the average of missing data per variable (27%), the efficiency of the multiple imputation estimates for the current study was approximately 99%.

Preliminary Analyses

Means and standard deviations of the study variables are provided in *Table 1*. Social desirability at Time 1 and 2 were significantly correlated ($r = .58$, $p < .001$). Intercorrelations between attachment variables, conflict resolution variables, and the mean of social desirability at Time 1 and 2 (the control variable for all remaining analyses), are presented in *Table 2.* As can be seen in the table, social desirability (SD) was significantly correlated with most of the attachment and conflict management variables, at both time points and was therefore controlled for in all analyses. The partial correlations between attachment anxiety with mother and father controlling for SD were high ($r = .67$, $p < .01$ at T1, $r = .71$, $p < .01$ at T2). However, the partial correlations between attachment avoidance with mother and father were only moderate ($r = .30$, $p < .01$ at T1, $r = .37$, $p < .01$ at T2). Given the lower overlap in attachment avoidance for both parents, as compared to attachment anxiety, as well as the study's focus on the separate covariance of attachment and conflict management over time for mother and fathers, attachment to mother and father were kept as separate variables in the current study. The conflict management styles with mother and father were highly correlated when controlling for social desirability: .61, .73, .72, $p < .01$ at Time 1, and .40, .55, and .65, $p < .01$ at Time 2, for collaboration, conflict avoidance, and stalemate, respectively, but mother and father measures were again kept separate in order to allow for the examination of each relationship separately.

In order to evaluate the effect of time and of adolescent gender on attachment style and conflict management style, two gender X time multivariate analyses of covariance (MANCOVA) were performed, with time as the within-participant factor, controlling for social desirability. The dependent variables were attachment anxiety and avoidance with mother and father for the first analysis, and collaboration, conflict avoidance, and stalemate with mother and father for the second analysis. For both MANCOVAs, there was a multivariate main effect of social desirability (respectively, Wilks' $\Lambda = .80$, $F\ (4, 193) = 11.85$, $p < .001$, multivariate $\eta^2 = .20$; $\Lambda = .72$, $F\ (6, 191) = 12.64$, $p < .001$, multivariate $\eta^2 = .28$), and gender of adolescent ($\Lambda = .93$, $F\ (4, 193) = 3.54$, $p < .01$, multivariate $\eta^2 = .07$; $\Lambda = .89$, $F\ (6, 191) = 4.10$, $p < .01$, multivariate $\eta^2 = .11$). For the attachment MANCOVA, a multivariate main effect of time was found ($\Lambda = .93$, $F\ (4, 193) = 3.51$, $p < .01$, multivariate $\eta^2 = .07$), with univariate effects indicating that avoidance with mother ($F\ (1, 196) = 4.69$, $p < .05$, partial $\eta^2 = .02$; $M = 3.06$, $SD = 1.32$ to $M = 3.09$, $SD = 1.23$) and anxiety with father ($F\ (1, 196) = 7.33$, $p < .01$, partial $\eta^2 = .04$; $M = 2.41$, $SD = 1.03$ to $M = 2.53$, $SD = 1.08$) both increased over time. An overall gender by time interaction was also found ($\Lambda = .93$, $F\ (4, 193) = 3.67$, $p < .01$, multivariate $\eta^2 = .07$), with a univariate effect for avoidance with father ($F\ (1, 196) = 6.90$, $p < .01$, partial $\eta^2 = .03$): avoidance with father increased over time for boys ($M = 3.30$, $SD = 1.29$ to $M = 3.51$, $SD = 1.26$), but decreased over time for girls ($M = 3.53$, $SD = 1.36$ to $M = 3.34$, $SD = 1.40$). For the conflict management MANCOVA, a multivariate main effect was also found for time ($\Lambda = .93$, $F\ (6, 191) = 2.31$, $p < .05$, multivariate $\eta^2 = .07$), with a univariate effect indicating that collaboration with mother increased over time ($F\ (1, 196) = 5.34$, $p < .05$, partial $\eta^2 = .03$; $M = 2.20$, $SD = .59$ to $M = 2.21$, $SD =$

.62). An overall gender by time interaction was also found (Λ = .91, F (6, 191) = 3.27, p < .01, multivariate η^2 = .09), with univariate effects indicating that conflict avoidance with mother (F (1, 196) = 7.00, p < .01, partial η^2 = .03), stalemate with mother (F (1, 196) = 15.10, p < .001, partial η^2 = .07), and stalemate with father (F (1, 196) = 7.04, p < .001, partial η^2 = .04) increased for girls over time.

Statistical Design and Analysis

The data were analyzed using structural equation modeling, with the EQS 6.1 for Windows statistical software (Bentler, 1985-2007). In all analyses, covariances partialling out social desirability average were used (Fletcher, Selgrade, & Germano, 2006). For each of the three conflict management strategies, three models per parent were compared. The first of these models, called the Attachment Predictor Models, investigated whether attachment predicted change in conflict resolution with the parent. Thus, this set of models included paths from Time 1 attachment to Time 2 conflict strategy, as well as stability paths from Time 1 to Time 2 for each attachment and conflict variable (e.g., attachment avoidance T1 to T2), and the covariances between attachment anxiety and avoidance, and between the attachment variables and the conflict strategy variable, within the same time point (see *Figure 1a*). The covariances between attachment and conflict strategy were always kept in the model, regardless of whether they were significant. However, covariances between attachment anxiety and avoidance were omitted from the model when they were low and not significant, in order to simplify the model. In the second model investigated, the Reverse Model, the paths from T1 attachment to T2 conflict strategy were replaced by the reverse paths from T1 conflict strategy to T2 attachment variables (*Figure 1b*). Lastly, a Bidirectional Model was tested, in which both paths from T1 attachment to T2 conflict

strategy *and* the reverse paths were included (*Figure 1c*). The Bidirectional Model is the hypothesized model for each conflict resolution strategy.

All models were tested using a two-group analysis where boys and girls were compared. Differences for boys and girls are only reported where significant. Paths were constrained one by one to be equal for boys and girls and a Lagrange Multiplier test for releasing constraints was conducted for each constraint. Constraints were included in the final models when their chi-squares were non-significant and the model fit did not worsen significantly. Paths were left unconstrained when the chi-square was significant or the model fit worsened significantly, indicating different path strengths for boys and girls.

All models were evaluated using the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA). Although all fit indices overestimate goodness of fit in sample sizes below 200, the CFI and RMSEA are recommended because they are considered less sensitive to sample size than others (Fan, Thomas, & Wang, 1999). A CFI over .90 and an RMSEA smaller or equal to .05 were the criteria used to determine good model fit (Hu & Bentler, 1999; Kline, 2004). Models were compared against one another using χ^2 difference tests.

Because aggregated multiple imputation data were used in all the structural equation models tested, study parameters involving standard errors, known to be biased with this approach (McKnight, McKnight, Sidani, & Figueredo, 2007), must be interpreted with caution. Thus, t-statistics and their associated significance levels are reported as per convention, but if t-statistics and effect sizes for each path were not consistent, more emphasis was placed on the effect size of the path.

Main Analyses

For all models, Mardia's coefficient of multivariate kurtosis was high, for both boys and girls, with the normalized estimates ranging from 2.86 to 6.68. Normalized estimates are considered high when above three (Mardia, 1974, as cited in Byrne, 2006). Thus, robust statistics were used and Satorra-Bentler scaled χ^2 are reported for all models. With the exception of the models for attachment and collaboration with father, there were no significant differences between boys and girls (i.e., all constraints had non-significant χ^2 for the Lagrange multiplier test). When two path coefficients are reported, the first number is for boys and the second is for girls. Of the three models compared for each conflict strategy with each parent, the best-fitting model is reported in more detail below.

Collaboration

Mother. The Bidirectional Model for mother fit the data well (χ^2 (df) = 18.73 (18), p = .41, CFI = 1.00, RMSEA = .02, *Figure 2*), significantly better than the Reverse Model (χ^2 (df) = 42.50 (20), p = .00, CFI = .90, RMSEA = .11; $\Delta\chi^2$ (Δdf) = 23.77 (2), $p <$ .001, 1-tailed), and better than the Attachment Predictor Model, but not significantly so (χ^2 (df) = 22.61 (20), p = .31, CFI = .99, RMSEA = .04; $\Delta\chi^2$ (Δdf) = 3.88 (2), p = .14, 1-tailed). Attachment avoidance significantly negatively predicted 14% of the variance in collaboration for girls (standardized path coefficient = -.38, $p < .05$), double the amount of variance predicted for boys, although this difference was not significant as noted earlier (standardized path coefficient = -.27, $p < .05$). Attachment anxiety also negatively predicted collaboration (standardized path coefficients = -.13, $p < .05$). Thus the first two hypotheses, that both attachment anxiety and avoidance would predict a decrease in collaboration, were supported within the relationship with mother. With respect to the

reverse paths, collaboration with mother did not predict later anxiety about abandonment, but negatively predicted later avoidance of closeness with her (standardized path coefficients = -.13, -.12, $p < .05$). Thus, avoidance and collaboration with mother had a bidirectional relationship over time.

Father. With respect to the relationship with father, the Bidirectional Model fit the data very well (χ^2 (df) = 8.40 (13), $p = .82$, CFI = 1.00, RMSEA = .00, see *Figure 3)*, significantly better than both the Attachment Predictor Model (χ^2 (df) = 19.57 (17), $p = .30$, CFI = .99, RMSEA = .04; $\Delta \chi^2$ (Δdf) = 11.17 (4), $p < .05$, 1-tailed) and the Reverse Model (χ^2 (df) = 22.76 (17), $p = .16$, CFI = .98, RMSEA = .06; $\Delta \chi^2$ (Δdf) = 14.36 (4), $p < .01$, 1-tailed). In contrast to the significant findings for both genders with mother, attachment anxiety and avoidance with father were found to be associated with later collaboration for girls only. Thus, there was a significant difference in the prediction of collaboration from attachment avoidance two years earlier between girls and boys (Lagrange multiplier test $\chi^2 = 5.42$, $df = 1$, $p < .05$) and a trend for a difference between boys and girls in the prediction from anxiety two years earlier (Lagrange multiplier test $\chi^2 = 3.44$, $df = 1$, $p < .10$). For girls, as hypothesized, attachment avoidance with father negatively predicted later collaboration with father, accounting for 10% of the variance (standardized path coefficients = - .32, $p < .05$). However, opposite to the first study hypothesis and the findings for mother, the more girls were anxiously attached to their father, the more they collaborated with him two years later, with attachment anxiety accounting for 1% of the variance (standardized path coefficients = +.12, $p < .05$). For boys, although attachment avoidance and collaboration with father were negatively correlated within the same time points (both at age 15 and 17) and attachment anxiety

and collaboration were negatively correlated only at age 17, there was no relation between attachment at age 15 and *later* collaboration with father at age 17.

With respect to reverse paths, collaboration with father did not predict later attachment anxiety with father for either gender. However, there was a significant difference between boys and girls in the predictions of later avoidant attachment with father from collaboration at age 15 (Lagrange multiplier test $\chi^2 = 10.66$, $df = 1$, $p < .01$). That is, the more girls collaborated with father at age 15, the less they were avoidantly attached to him two years later (standardized path coefficient = -.18, $p < .05$), accounting for 3% of the variance in avoidant attachment, whereas the more boys collaborated with father, the *more* they tended to be avoidantly attached to him two years later (standardized path coefficient = +.12, $p < .10$). Thus, there was a bidirectional relation between attachment avoidance and collaboration with father for girls only.

Conflict Avoidance

Mother. The Attachment Predictor Model for mother fit the data well (χ^2 (df) = 16.96 (20), $p = .65$, CFI = 1.00, RMSEA = .00, see *Figure 4*), slightly better than the Bidirectional Model, but not significantly so (χ^2 (df) = 16.56 (18), $p = .55$, CFI = 1.00, RMSEA = .02; $\Delta \chi^2$ (Δdf) = .40 (2), $p = .82$, 1-tailed). Furthermore, the Reverse Model fit the data poorly (χ^2 (df) = 34.08 (20), $p = .03$, CFI = .94, RMSEA = .08; $\Delta \chi^2$ test could not be conducted because of identical degrees of freedom) and neither of the reverse paths was significant. Thus, the Attachment Predictor Model was considered the most representative of the data. Anxious attachment with mother did not predict later conflict avoidance with mother, whereas avoidant attachment with mother predicted conflict avoidance with mother, accounting for 7% of the variance in later conflict avoidance for

boys, and 8% for girls (standardized path coefficients = .27, .29, both $p < .05$). Thus, the hypothesis that attachment avoidance would predict an increase in conflict avoidance within the relationship with mother was supported.

Father. The Bidirectional Model fit the data very well (χ^2 (df) = 13.56 (18), p = .76, CFI = 1.00, RMSEA = .00, see *Figure 5*), significantly better than the Attachment Predictor Model (χ^2 (df) = 19.66 (20), p = .48, CFI = 1.00, RMSEA = .00; $\Delta \chi^2$ (Δdf) = 6.10 (2) , $p < .05$, 1-tailed), with a trend for fitting better than the Reverse Model (χ^2 (df) = 18.87 (20), p = .53, CFI = 1.00, RMSEA = .00; $\Delta \chi^2$ (Δdf) = 5.31 (2), p = .07, 1-tailed). As with mother, there was no relation between attachment anxiety with father at age 15 and conflict avoidance with him two years later. However, as hypothesized and found within the relationship with mother, attachment avoidance with father at age 15 positively predicted 3% of the variance in conflict avoidance with him two years later for boys, and 2% for girls (standardized path coefficients = .17, .14, both $p < .05$), and the reverse relation was also significant (standardized path coefficients = .12, .14, both $p < .05$). Thus, although attachment anxiety and conflict avoidance with father were unrelated longitudinally, there was a bidirectional relation between attachment avoidance and conflict avoidance with father.

Stalemate

Mother. The hypothesis that attachment anxiety would predict later stalemate was not supported within the relationship with mother. The bidirectional model fit the data well (χ^2 (df) = 15.45 (18), p = .63, CFI = 1.00, RMSEA = .00), but not significantly better than the Attachment Predictor Model (χ^2 (df) = 16.63 (20), p = .68, CFI = 1.00, RMSEA = .00; $\Delta \chi^2$ (Δdf) = 1.18 (2), p = .55, 1-tailed) or the Reverse Model (χ^2 (df) = 16.38 (20),

p = .69, CFI = 1.00, RMSEA = .00; $\Delta \chi^2$ (Δdf) =.93 (2), p = .63, 1-tailed). Although attachment avoidance and stalemate tended to correlate at age 15 (r = .10, .11, both p < .10), and attachment anxiety and stalemate correlated significantly at age 15 (r = .14, .10, both p < .05) and tended to correlate at age 17 (r = .12, .10, both p < .10), attachment anxiety and avoidance with mother at age 15 did not predict stalemate with mother two years later. Similarly, stalemate with mother at age 15 did not predict attachment anxiety or avoidance with mother two years later.

Father. The bidirectional model fit the data well and best (χ^2 (df) = 9.15 (18), p = .96, CFI = 1.00, RMSEA = .00), although not significantly better than the Attachment Predictor Model (χ^2 (df) = 12.60 (20), p = .89, CFI = 1.00, RMSEA = .00; $\Delta\chi^2$ (Δdf) = 3.45 (2), p = .18, 1-tailed), nor the Reverse Model (χ^2 (df) = 10.78 (20), p = .95, CFI = 1.00, RMSEA = .00; $\Delta \chi^2$ (Δdf) = 1.63 (2), p = .44, 1-tailed). Contrary to prediction, attachment anxiety with father did not correlate with stalemate with father within the same time point, nor did it predict stalemate with father two years later. In the Attachment Predictor Model, unexpectedly, attachment avoidance tended to predict stalemate with father two years later (standardized path coefficients = .11, .10, p < .10). However, this trend effect was small and was then lost in the Bidirectional Model. Stalemate at age 15 did not predict later anxiety with father and accounted for only 1% of the variance in later avoidant attachment with father (standardized path coefficient = .11, .12, p < .05).

Discussion

Summary of findings

Two of our three hypotheses about the effect of attachment on change in conflict management styles were upheld. Attachment anxiety and avoidance at initial time predicted less collaboration over two years within the relationship with mother for both adolescent genders. For the relationship with father, only attachment avoidance predicted a decrease in collaboration for girls only. In addition, the more boys and girls were avoidantly attached to a parent, the more they avoided conflict over two years, providing support for our second hypothesis. The third hypothesis (i.e., that attachment anxiety with a parent would lead to an increase in stalemate behaviours) was not supported.

With respect to the bidirectionality of effects, our prediction that earlier experiences collaborating would be associated with less attachment insecurity over time was supported only for attachment avoidance. That is, there was a bidirectional relation over time between attachment avoidance and collaboration with mother for both adolescent genders, and with father for girls only. A bidirectional relation was also found between attachment avoidance and conflict avoidance with father, for both genders.

Attachment stability and conflict

Overall, strong stability in attachment was found from age 15 to 17, with attachment at Time 1 accounting for 38 to 42% of the variance in attachment at Time 2, consistent with previous research (Allen, McElhaney, Kuperminc, & Jodl, 2004; Ammaniti, van IJzendoorn, Speranza, & Tambelli, 2000; Scharfe & Cole, 2006). However, the results of this study also indicate that avoidant attachment was impacted by conflict behaviours adolescents engage in with their parents (see *Bidirectional*

Relationship section below for more details). This result is consistent with findings that adolescents' enmeshed behaviours and tendency to focus on personal characteristics during arguments with mothers predicted a decrease in attachment security over two years (Allen et al., 2004). Indeed, the current study underscores that adolescents' interactions with parents during conflict can indeed impact on their comfort with emotional closeness with them over time, potentially further contributing to the development of adolescents' attachment styles. Although assimilation of information from conflict interactions with parents into attachment schemas likely occurs, the present study suggests that attachment schemas might also accommodate themselves to new information about relationships with parents from conflict experiences with them over time. This most likely occurs if such conflict interactions are sustained over time, and under conditions of environmental risk (Allen et al., 2004; Fraley, 2002)

Predictions from attachment avoidance

Collaboration. The more adolescents were avoidantly attached with mother at age 15, the less they collaborated with her over time. Comfort with emotional closeness might be aiding the development of collaboration skills, perhaps by allowing the intimate discussions necessary for collaboration. Our longitudinal results are consistent with previous findings that security with mother is concurrently associated with collaborative conflict resolution with mothers, with secure adolescents maintaining more balanced assertiveness during problem-solving with their mothers (Kobak et al., 1993) and tending to compromise more with their parents as compared to dismissing adolescents (Ducharme, Doyle, & Markiewicz, 2002).

For the relationship with fathers, girls' attachment avoidance predicted a decrease in collaboration with him over time. This is a new finding. The only previous study examining attachment with father and collaborative conflict management did not find a significant association (Ducharme, Doyle, & Markiewicz, 2002). One possible explanation for this difference is that mother and father collaboration were not separate in the earlier study.

Conflict avoidance. The more boys and girls were avoidantly attached initially with both mother and father, the more they increasingly avoided conflict with him or her over time, consistent with studies investigating adolescents' concurrent attachment and conflict avoidance with mothers (Kobak et al., 1993), both parents (Ducharme, Doyle, & Markiewicz, 2002), and romantic partners (Creasey & Hesson-Mcinnis, 2001; Creasey, Kershaw, & Boston, 1999) . Given the findings associating attachment avoidance with higher skin conductance reactivity in response to interpersonal stressors (Diamond, Hicks, & Otter-Henderson, 2006), attachment avoidance likely makes the task of discussing conflict very uncomfortable physiologically and cognitively. The fact that those initially more uncomfortable with closeness increasingly used avoidance of conflict with both parents over time implies that perhaps avoidance of conflict is becoming entrenched as a pattern of responding to conflict within the relationship with parents.

Predictions from attachment anxiety

Collaboration. The more adolescents were anxiously attached to their mother at age 15, the less they collaborated with her over two years. Security about the emotional availability of mother, most often the primary attachment figure, might preclude adolescents from interpreting conflict as overly threatening, thereby allowing them to

consider their mothers' point of view, and might make disclosure of their own feelings and perspectives more comfortable, thus facilitating collaborative conflict management. Our result is consistent with findings that attachment anxiety is associated with more negative or aggressive conflict behaviours (Creasey & Ladd, 2005; Creasey & Hesson-McInnis, 2001; Kobak et al., 1993). Indeed, anxiously attached adolescents experience more anger and fear during conflict (Collins, 1996; Creasy & Hesson-McInnis, 2001), which might trigger more aggressive or intrusive types of conflict behaviour, thereby precluding collaboration with parents at the same time.

Of note, studies comparing groups of secure and preoccupied adolescents, rather than looking at the dimensions of anxious attachment as in the current study, found no significant differences in mid-adolescents' use of collaborative conflict resolution with their parents (Ducharme, Doyle, & Markiewicz, 2002) or late adolescent boys' collaboration with their romantic partners (Creasey, 2002). Thus, dimensional measures of anxious attachment may be more sensitive than categorical measures.

Within the relationship with father, a longitudinal relation between anxious attachment and later collaboration was also found, for girls only, in the opposite direction of our hypothesis and the results for the whole sample with mothers. Specifically, the more girls were anxious about the emotional availability of their father at age 15, the *more* they collaborated with him over time. It could be that anxious attachment leads to different conflict behaviours in different situations, depending on factors such as whether the relationship is open or closed (i.e., with a friend *vs.* a family member one lives with), conscious decisions as to the level of intimacy desired in a given relationship, and the relative importance of the attachment figure in the attachment hierarchy. With impending

adulthood and potential upcoming separations from parents, perhaps girls who worry about the availability of their father might be more and more motivated to collaborate with him, so as not to lose the relationship. Given that girls establish intimacy with their friends more through discussions and self-disclosure than boys (McNelles & Connolly, 1999), girls might be more likely to learn collaboration skills in their friendships over time and more anxiously attached girls might use these newfound skills with their fathers. In contrast, given mother's likely position at the top of the attachment hierarchy, perhaps adolescents who are anxiously attached to her are more confident of maintaining a relationship with her as they enter adulthood, albeit an inconsistent one in which they worry about her responsiveness to their needs, and therefore perhaps emotionally tolerate a lack of collaboration and more direct conflict better than they do with fathers.

Stalemate. Anxious attachment did not predict stalemate, with either mothers or fathers, for either boys and girls. Thus, our fourth study hypothesis was not supported. Stalemate was hypothesized to be more likely among adolescents who are anxious about the emotional availability of parents because it is an ambivalent conflict management strategy that implies expressing displeasure without direct confrontation, using behaviours such as sulking or giving the silent treatment. Anxious adolescents did tend to use more stalemate with mother at age 15, but the association was no longer significant at age 17. Given the finding that more anxiously attached adolescents collaborated less with mother over time, and considering the closed nature of relationships with mothers, perhaps these adolescents are becoming increasingly direct with their mothers as they age, becoming more verbally aggressive with time. Indeed, attachment anxiety has been associated with more anger, fear, and sadness. (Creasey & Hesson-McInnis, 2001). Thus,

future research should investigate the longitudinal link between adolescents' attachment and conflict strategies in which components such as expression of anger, use of verbal aggression, and attempts to dominate or win the argument are included.

As with mother, no relation was found between anxious attachment and stalemate within the relationship with father. In this case, perhaps boys might be using more verbally aggressive behaviours during conflict over time, as suggested above. It is unlikely, however, that this is the case for girls because the more girls were anxiously attached to their fathers at age 15, the *more* they collaborated with him over time. Thus, adolescents who are anxiously attached to mothers or fathers might represent two groups. The first group might respond to disagreements with more fear, worrying more about rejection and abandonment, either due to past experiences or present context, and therefore more likely to attempt to collaborate and avoid aggressive confrontation. For a second group, disagreements might trigger more anger, leading to more aggressive confrontations. In addition to gender, adolescent temperament might interact with anxious attachment in predicting such differences in responses to conflict, an interesting avenue for future research.

The results for stalemate were considerably weaker than for collaboration or conflict avoidance. Stalemate items tapped behaviours such as sulking, giving the silent treatment, withdrawing love or affection, and bickering without getting anywhere. Of the three conflict management strategies, it had the lowest reliability. It could be that its questionnaire items represent two different approaches to conflict management, one more passive including actions such as sulking, and one more active, involving bickering. Another possibility is that adolescents anxiously attached to their parents do in fact use

such behaviours, but do not understand, label, or report them as withdrawing love or giving the silent treatment, but rather more in terms of feeling hurt. Such adolescents, less aware of the underlying motivations to affect their parents' emotional state or behaviour, would under-report their use of stalemate. Anxious attachment in infants is understood as a strategy to increase an inconsistent parent's responsivity. Similarly, perhaps anxious adolescents are aware of their worries about their parents' availability or rejection, but are less aware of the behaviours they employ during conflict to engage parents emotionally.

Adolescent Gender

With respect to adolescent gender, it was hypothesized that, given the greater focus on relationships among adolescent girls, avoidant attachment with either parent would be more strongly associated with change in conflict management with parents for girls than boys. Although not significant, this was found to be true with respect to collaboration with parents. That is, attachment avoidance with mother accounted for double the amount of variance in later collaboration with mother for girls than boys (i.e., 14% *vs.* 7%). Combined with the longitudinal association between attachment avoidance and collaboration with father for girls only, these results suggest that avoidant attachment with parents is more predictive of later collaboration for girls than boys. This gender difference is consistent with a study finding that attachment security with mother was associated with positive conflict resolution with friends for both male and female early adolescents, whereas attachment with father was associated with conflict resolution for girls only (Dwyer et al., 2010). It could be that having close relationships with parents is more valued for girls, especially during adolescence with its focus on relationships. In contrast, parents encourage boys to be more independent than girls, and fathers encourage

autonomy more than mothers (Kenny & Gallagher, 2002). Thus, boys might be answering attachment avoidance questionnaires in such a way as to reflect normative avoidance of closeness, which might be less impactful on their ability to resolve conflict.

Bidirectional relationships in attachment and conflict management

Bidirectional relationships between *attachment anxiety* and conflict management were not found. In our sample of middle adolescents, engaging in collaboration or more negative conflict styles such as avoiding conflict or stalemate behaviours did not seem to impact on the development of beliefs about the emotional availability of parents. However, with respect to *attachment avoidance*, a bidirectional association was found for avoidant attachment and collaboration with mother for boys and girls, and with father for girls only. It could be that attachment anxiety is less impacted than attachment avoidance by interactions with parents in adolescence because it is more entrenched in interactional patterns from earlier childhood. In contrast, avoidance of closeness with parents might be more impacted by interactions with parents in adolescence because adolescents are engaging in the normative process of individuation and have reached a developmental stage where "closeness" is now being negotiated and re-defined.

Avoidance of closeness appears to decrease the practice of collaboration with mothers, and collaboration itself likely leads to an increase in comfort with emotional closeness with mothers over time. Similarly, the more girls avoided closeness with father, the less they collaborated with him over time, and the less they collaborated with him at age 15, the less they avoided closeness with him over time. Repeated collaboration is unlikely without reciprocation. Adolescents collaborating with mother and girls collaborating with father are likely doing so because such a strategy is possible. Such

repeated constructive conflict resolution also makes emotional closeness with parents more comfortable. Furthermore, the fact that these adolescents themselves engage in collaboration likely increases their sense of competence and success within the relationship, making intimacy less uncomfortable over time.

A bidirectional association was also found between attachment avoidance and conflict avoidance, but only within the relationship with father. With him, the more adolescents avoided emotional closeness, the more they avoided conflict over time, and the reverse was also true: the more they avoided conflict at age 15, the more they avoided emotional closeness over time. With respect to stalemate, although earlier avoidant attachment tended to predict changes in stalemate with father across two years, this relation was no longer significant when reverse paths were added. In the final bidirectional model, only the reverse path was significant: the more adolescents engaged in stalemate at age 15, the more they avoided emotional closeness with father over time. Thus, an increase in attachment avoidance with father over time was associated with both earlier avoidance of conflict and weakly with earlier stalemate use (1-2% of the variance accounted for). Perhaps such ineffective conflict resolution with father contributes to the deepening of adolescents' automatic reaction of discomfort with closeness with him. Over time, directly addressing the conflict as well as any more intimate discussion might become more and more difficult, leading to a subsequent distancing with father, but not mother with whom, despite relative discomfort with intimacy, closer contact might be more tolerable, necessary, or enforced by the mother or societal expectations.

Strengths, limitations, and future directions

The current study examined longitudinal associations between adolescents' attachment with parents and styles of managing conflict with parents. The longitudinal design contributes significantly to the literature, allowing examination of whether attachment predicts change in conflict styles over time. As well, changes in attachment were also noted. Longitudinal studies investigating attachment and conflict resolution are uncommon with adolescent samples. Existing longitudinal studies investigate the relation between attachment and later social competence with peers or friends and/or problem solving of pictured social dilemmas (e.g., Sagi-Schwarz & Aviezer, 2005; Sroufe, 2005; Steele & Steele, 2005). However, it is important to note that even with a longitudinal design such as the one used in this study, causality cannot be automatically inferred. Rather, longitudinal studies clarify the question of directionality of effects, a necessary contribution in the context of covarying variables. Our results indicated bidirectional relations between attachment avoidance and collaboration (with mother for both adolescent genders and with father for girls only) or conflict avoidance with father. The current study also clarified that, with respect to attachment and conflict management from age 15 to 17, even when paths from conflict management strategy to later attachment are taken into account, earlier attachment still appears to affect later collaboration and conflict avoidance with mother and father. Thus, the possibility that attachment and conflict management with each parent are correlated simply due to the impact of conflict behaviours on attachment has been ruled out in this study, and with further replication, could be ruled out more definitively.

Although the longitudinal design is an improvement over correlational studies examining concurrent measures or cross-sectional studies, a limitation of the current study is that self-report data was used exclusively. In order to counter participants' potential bias in reporting on their own behaviours, analyses were conducted controlling for social desirability. Future studies should investigate whether the results of the present study are replicated when attachment and conflict management are measured by independent observers, such as with observed discussion between parents and adolescents. Although such research has been conducted within the same time point with adolescents and their mothers (e.g., Kobak et al., 1993), with results consistent with studies using self-reports, longitudinal studies of this sort are needed with mothers, as well as fathers. Furthermore, examination of the relation between attachment and conflict management with parents should include not only the perspective of the adolescent, but also that of parents. Such studies would therefore investigate a true transactional model, in which parents potentially impact adolescents over time, and adolescents might impact their parents over time as well.

The present study further contributed to the literature by examining the different predictions of attachment with mother *vs.* father to conflict resolution with each parent. However, anxious attachment with mother and father were found to be highly correlated. The advantage of keeping the structural equation models for mother and father separate was that differential predictions from attachment anxiety with mother and father could be compared. For example, had attachment anxiety with mother and father been combined, the relation found between girls' anxious attachment and collaboration with father would not have emerged. However, a disadvantage of the separate analyses is that the effect of

attachment with the other parent is not controlled in the analyses. Future research could extend the findings of the current study using a larger sample size that would allow more complex structural equation models, where attachment with mother and father could be examined simultaneously.

In the current study, multiple imputation was used to handle missing data, an improvement over other methods such as mean substitution or listwise or pairwise deletion. However, a limitation of this process is that analyses were conducted using aggregated data from multiple imputed data sets. Although the bias inherent in this method (i.e. biased standard errors) was considered carefully when interpreting the results, future studies could use other methods of data analysis when using multiple imputation data, such as conducting the analyses on all data sets and comparing parameters, using statistical software that automatize this process.

Lastly, the present study has valuable clinical implications. Given that adolescent-parent conflict is an important and common concern in community mental health clinics and is associated with more severe internalizing symptoms (Greenberger, Chen, Tally, & Dong, 2000), the identification of specific types of attachment insecurity as precursor to adolescents' ineffective conflict behaviours with parents is an important finding. The results of the current study suggest that helping adolescents and parents increase adolescents' comfort with emotional closeness with their parents and their confidence in their parents' emotional availability, in addition to the communication and problem solving components of cognitive-behavioural interventions, might have the effect of facilitating conflict resolution. Furthermore, the results also suggest that cognitive-behavioural interventions aimed at teaching collaborative methods of conflict resolution

might also impact adolescents' comfort with closeness with their parents, which in turn could have a positive impact on other social competencies.

Table 1: Percentage of missing data, means and standard deviations of study variables

	Percent Missing	*M*	*SD*
Time 1			
Anxious attachment with mother	17.1	2.58	1.00
Avoidant attachment with mother	17.1	3.05	1.32
Anxious attachment with father	18.0	2.43	1.04
Avoidant attachment with father	18.5	3.41	1.32
Collaboration with mother	18.5	2.20	.59
Conflict avoidance with mother	19.0	1.39	.80
Stalemate with mother	18.0	1.27	.74
Collaboration with father	20.0	1.97	.72
Conflict avoidance with father	20.5	1.37	.80
Stalemate with father	20.5	1.12	.71
Time 2			
Anxious attachment with mother	35.1	2.61	.96
Avoidant attachment with mother	35.1	3.07	1.23
Anxious attachment with father	39.5	2.54	1.08
Avoidant attachment with father	39.5	3.42	1.33
Collaboration with mother	33.7	2.21	.62
Conflict avoidance with mother	33.7	1.33	.78
Stalemate with mother	33.7	1.22	.78
Collaboration with father	34.1	1.97	.85
Conflict avoidance with father	34.1	1.19	.82
Stalemate with father	34.1	1.07	.79
Control variable			
Social desirability average (T1-2)	14.1/33.2*	.48	.18

** The percent missing for social desirability is on the left of the slash for Time 1, and on the right for Time 2. The average social desirability score was computed after imputing the data for social desirability for each year separately.*

Table 2: Intercorrelations between attachment, conflict management, and control variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Time 1															
1. Anxious attachment with mother		.10	.67**	.20**	.13^{t}	.18*	.21**	-.01	.20**	.13^{t}	.67**	.12^{t}	.50**	.23**	-.19**
2. Avoidant attachment with mother			.01	.35**	-.32**	.28**	.21**	-.16*	.16*	.14^{t}	.05	.67**	-.08	.14*	-.42**
3. Anxious attachment with father				.09	.02	.17*	.32**	-.07	.12^{t}	.11	.43**	.05	.64**	.12^{t}	-.17*
4. Avoidant attachment with father					-.21**	.17*	.27**	-.51**	.30**	.36**	.30**	.45**	.16*	.65**	-.17*
5. Collaboration with mother						-.21**	-.23**	.61**	-.06	-.13^{t}	.11	-.32**	.08	-.08	.25**
6. Conflict avoidance mother							.58**	.01	.76**	.50**	.14^{t}	.24**	.14^{t}	.09	-.40**
7. Stalemate with mother								-.17*	.46**	.76**	.26**	.26**	.38**	.27**	-.39**
8. Collaboration with father									.00	-.12^{t}	-.01	-.27**	-.06	-.34**	.14^{t}
9. Conflict avoidance father										.61**	.15*	.22**	.12	.32**	-.35**
10. Stalemate with father											.20**	.24**	.18*	.33**	-.24**
Time 2															
11. Anxious attachment with mother												.23**	.74**	.36**	-.18*
12. Avoidant attachment with mother													.13^{t}	.43**	-.57**
13. Anxious attachment with father														.35**	-.25**
14. Avoidant attachment with father															-.27**
15. Collaboration with mother															
16. Conflict avoidance mother															
17. Stalemate with mother															
18. Collaboration with father															
19. Conflict avoidance father															
20. Stalemate with father															
Control Variables															
21. Sex															
22. Social desirability T1-2															

^{t} $p < .10$, * $p < .05$, ** $p < .01$

Table 2 continued:

	16	17	18	19	20	21	22
Time 1							
1. Anxious attachment with mother	.11	.15*	-.17*	.13^{t}	.12^{t}	-.12^{t}	-.25**
2. Avoidant attachment with mother	.39**	.14*	-.06	.05	-.14^{t}	.13^{t}	-.23**
3. Anxious attachment with father	.07	.10	-.04	.04	.06	.00	-.12
4. Avoidant attachment with father	.26**	.33**	-.31**	.31**	.29**	-.09	-.30**
5. Collaboration with mother	-.24**	-.10	-.03	-.04	.06	-.12	.10
6. Conflict avoidance mother	.52**	.44**	-.12	.33**	.27**	.00	-.39**
7. Stalemate with mother	.36**	.50**	-.08	.26**	.39**	-.10	-.44**
8. Collaboration with father	-.17*	-.09	.27**	-.14^{t}	-.09	.08	.11
9. Conflict avoidance father	.45**	.44**	-.25**	.49**	.39**	-.05	-.32**
10. Stalemate with father	.41**	.53**	-.07	.49**	.56**	-.15*	-.37**
Time 2							
11. Anxious attachment with mother	.17*	.26**	-.20**	.18*	.20**	-.19**	-.33**
12. Avoidant attachment with mother	.47**	.24**	-.15*	.26**	.06	.17*	-.37**
13. Anxious attachment with father	.02	.18*	-.20**	.03	.12^{t}	-.12^{t}	-.26**
14. Avoidant attachment with father	.14^{t}	.17*	-.59**	.35**	.30**	.06	-.27**
15. Collaboration with mother	-.38**	-.24**	.40**	-.14^{t}	-.03	-.06	.31**
16. Conflict avoidance mother		.68**	-.03	.61**	.37**	-.17*	-.41**
17. Stalemate with mother			-.06	.49**	.69**	-.34**	-.44**
18. Collaboration with father				-.07	-.05	.00	.09
19. Conflict avoidance father					.76**	-.17*	-.34**
20. Stalemate with father						-.30**	-.29**
Control Variables							
21. Sex							.14*
22. Social desirability T1-2							

^{t} $p < .10$, * $p < .05$, ** $p < .01$

Figure 1: Models to be tested for each conflict management strategy, for mother and father separately

Figure 1a: Attachment Predictor Model

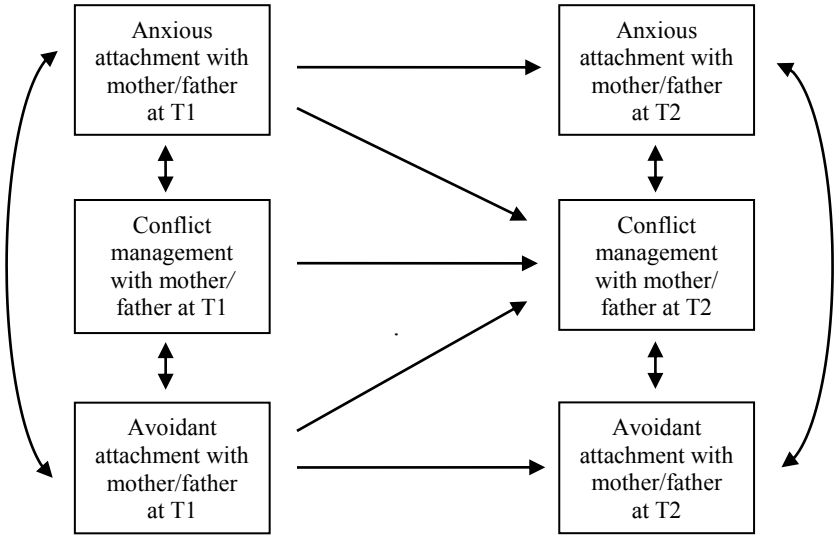


Figure 1b: Reverse Model

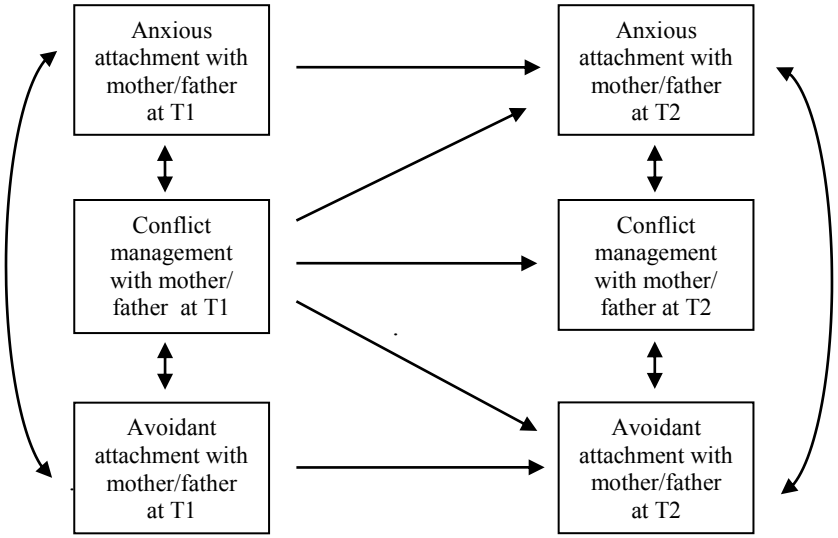


Figure 1c: Bidirectional Model

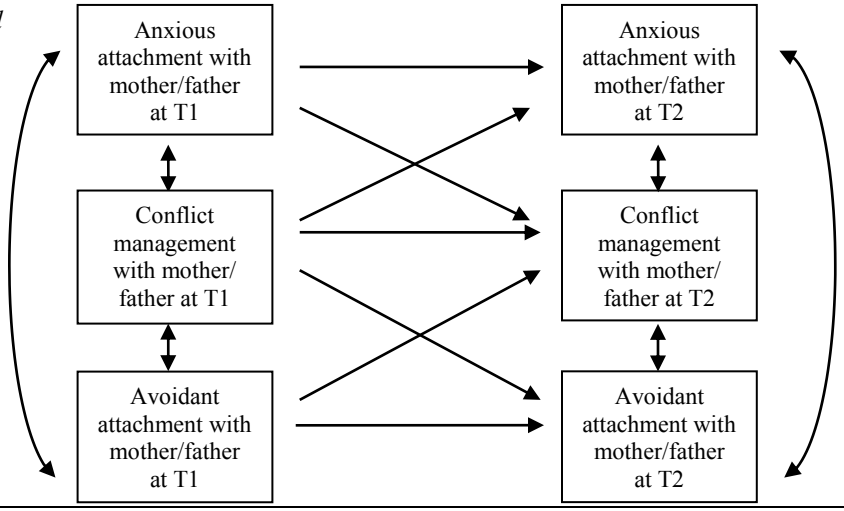
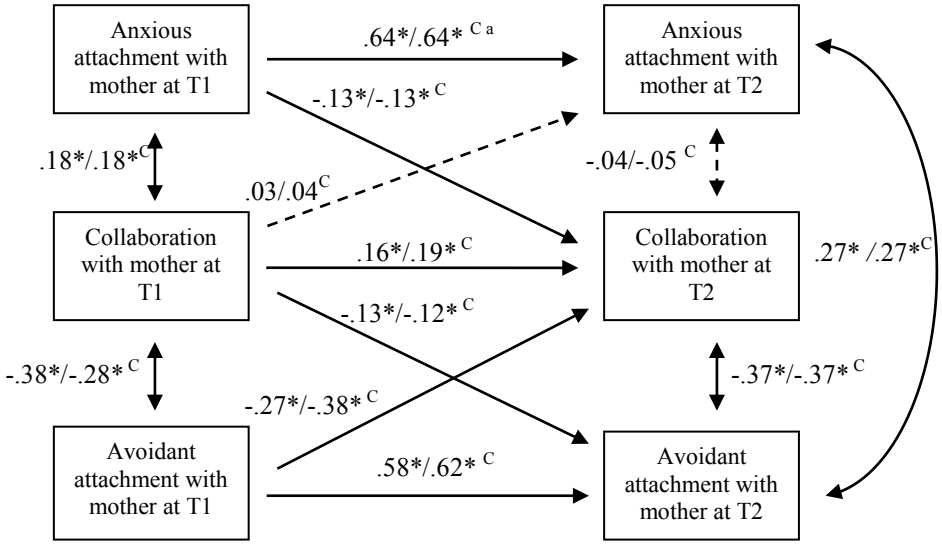


Figure 2: Bidirectional model for attachment and collaboration with mother



Satorra-Bentler scaled χ^2 (df) = 18.73 (18), p = .41, CFI = 1.00, RMSEA = .02.

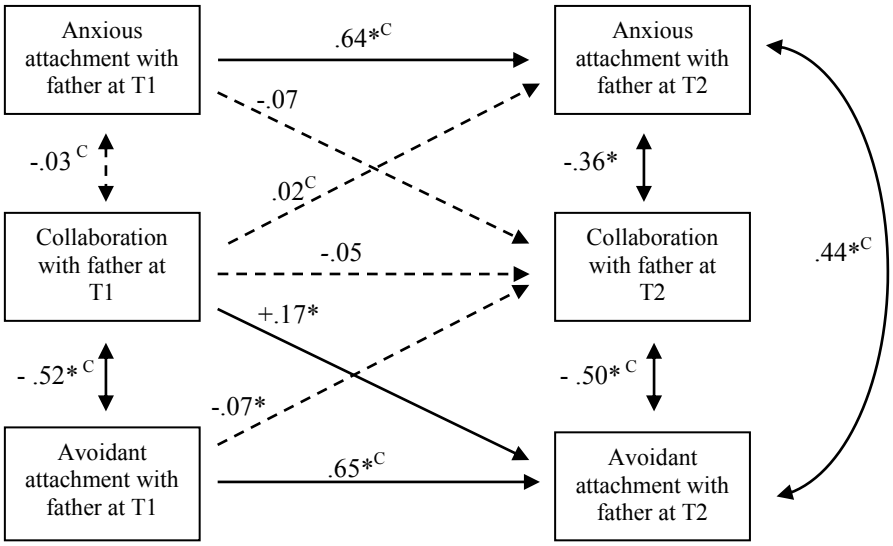
[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths. The significance tests for all paths are 1-tailed.

[C] Path constrained to be equal for boys and girls.

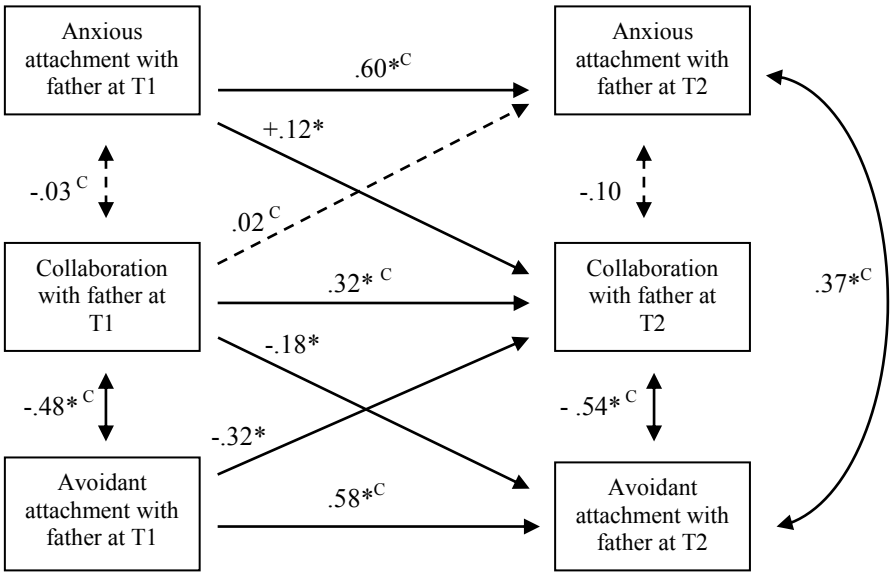
* $p < .05$, [t] $p < .10$

Figure 3: Birdirectional model for attachment and collaboration with father

Boys



Girls



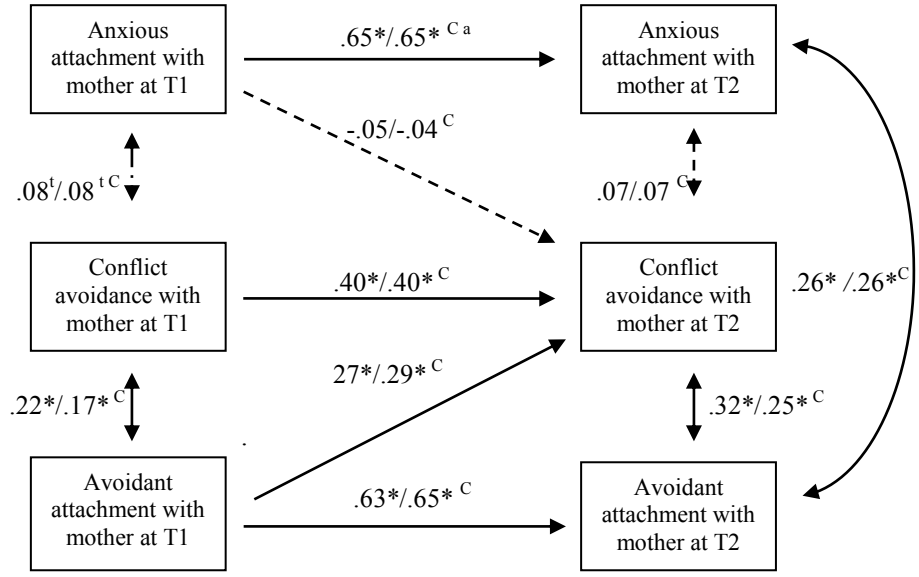
Satorra-Bentler scaled χ^2 (df) = 8.40 (13), p = .82, CFI = 1.00, RMSEA = .00.

[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths. The significance tests for all paths are 1-tailed.

[C] Path constrained to be equal for boys and girls.

* $p < .05$, [t] $p < .10$

Figure 4: Attachment avoidance predicts conflict avoidance with mother two years later



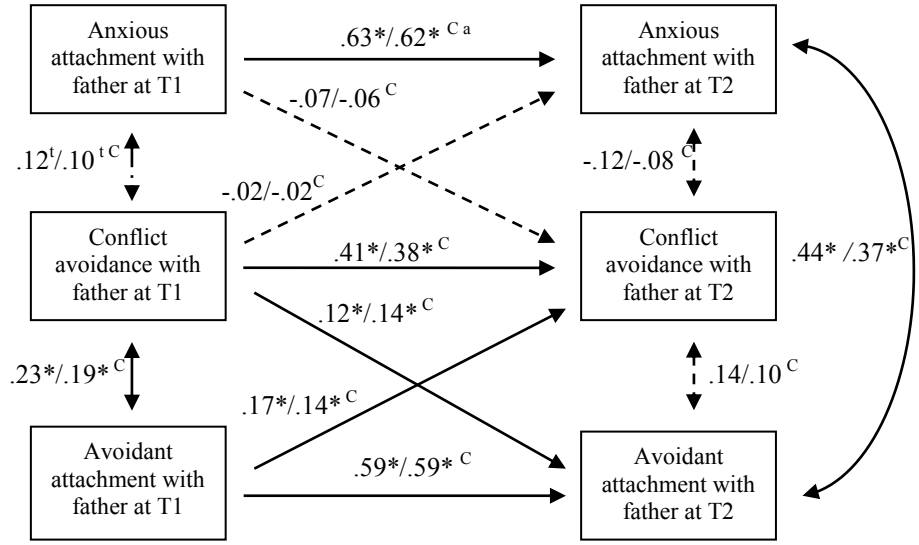
Satorra-Bentler scaled χ^2 (df) = 16.96 (20), p = .65, CFI = 1.00, RMSEA = .00.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

[C] Path constrained to be equal for boys and girls.

* $p < .05$, [t] $p < .10$

Figure 5: Bidirectional model for attachment and conflict avoidance with father



Satorra-Bentler scaled χ^2 (df) = 13.56 (18), p = .76, CFI = 1.00, RMSEA = .00.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

[C] Path constrained to be equal for boys and girls.

* $p < .05$, [t] $p < .10$

Abstract

Associations between attachment style with parents and conflict management with close friends in adolescence: General attachment or conflict management with parents as mediators?

This four-year longitudinal study examined the relation between adolescents' attachment style with mother and father and conflict management with best friends three years later. Two mediators were tested: attachment style with others in general and conflict management with each parent. Adolescents (n = 205, M = 13, SD = 1.30 at T1) filled out questionnaires assessing attachment with mother, father (at T1), and others in general (T2), as well as conflict management with mother, father (T3), and best friend (T4-5). Results indicated that the more adolescents were avoidantly attached with mother and father, the less they collaborated with their best friend three years later. This relation was fully mediated by attachment avoidance with others in general and by collaboration with father, and, for girls only, collaboration with mother also tended to mediate the relation. The more boys were anxiously attached with either parent, the less they collaborated and the more they avoided conflict or used stalemate behaviours (i.e., sulking, bickering) with their best friends three years later. For boys, the relation between attachment anxiety with *mother* and collaboration tended to be mediated by general attachment anxiety, whereas the relation between attachment anxiety with *father* and negative conflict strategies was mediated by the use of that conflict strategy with their fathers. Thus, anxious attachment with mother appeared to impact boys' positive conflict behaviours with friends through generalizing to close others, whereas attachment anxiety

with father impacted their use of negative conflict behaviours through the practice of these behaviours with father.

Associations between attachment style with parents and conflict management with close friends in adolescence: general attachment or conflict management with parents as mediators?

Conflict is a relational event. It occurs between two or more persons and, as such, is likely affected by the quality of their relationship, as well as the relational background of each person. Bowlby's (1969) attachment theory has been used to predict and explain various interpersonal phenomena, including behaviour during conflict, through the notion of internal working models, or beliefs and expectations about oneself and others. Indeed, attachment can be seen as the context in which conflict takes place: the relational framework developed through one's relationship with parents that each person carries with them into various interpersonal experiences. What might be most important to the current social abilities of adolescents with both parents and peers are automatic habits such as avoiding emotional intimacy or feeling insecure in relationships, developed through subtle ongoing interaction with parents over multiple years. These habits might affect how one interprets disagreements with others and responds behaviourally to the ensuing conflict. Thus, the first purpose of the present study is to examine the longitudinal relation between adolescents' attachment style with parents and the manner in which adolescents resolve conflict in their friendships.

The second purpose is to investigate two processes by which attachment with parents might impact on conflict management with friends. The first process is posited by attachment theory: that attachment with the primary caregivers generalizes to other relationships, in turn affecting behaviour in these relationships, i.e., conflict with friends. That is, a general attachment style, established by adolescence (Allen & Land, 1999),

develops from attachment with parents and affects conflict management with friends. In the second investigated process, conflict behaviour *with parents* is the central variable connecting attachment with parents and conflict behaviour with friends. In this hypothesis, attachment to parents sets the stage for the use of certain conflict management strategies with parents and it is these strategies, once learned, that are then used with friends. In other words, the style of managing conflict is what generalizes from the relationship with parents to friendships. These tendencies to manage conflict in particular ways can be constructive, skilful and planned, or more automatic, ineffective, or even detrimental to relationships. Thus, the second question of the present study is to identify whether general attachment styles and/or conflict management behaviour with parents mediate the association between attachment with parents and conflict management with friends.

Attachment and Internal Working Models

Originally, Bowlby theorized that "starting during the first months […], and extending throughout the years of childhood and adolescence in his relations with both parents, [the child] builds up working models of how attachment figures are likely to behave towards him in any variety of situations; and on those models are based all his expectations" (1973, p.369). Thus, children experiencing optimal caregiving develop an internal working model (IWM) of themselves as valued and of others as trustworthy (Bowlby, 1980). Conversely, children experiencing a relationship with a caregiver who is consistently unresponsive or inconsistently responsive to their needs learn that they are not worthy of care and cannot depend on others to be responsive, thereby developing negative IWMs of themselves and others.

Adult and adolescent attachment is assessed primarily by self-report measures or interview (Shaver & Mikulincer, 2004). In their factor analyses of all available self-report adult attachment scales, Brennan, Clark, and Shaver (1998) identified two independent factors underlying attachment insecurity: anxiety about availability of / rejection by others, and avoidance of closeness / discomfort with intimacy. Such generalized beliefs about relationships are considered to affect expectations and interpretations of interpersonal events, and as such likely impact on reactions and behaviour during conflict with close friends.

Central to attachment theory is the premise that as children become adults, a general attachment style that affects interactions with close others develops, a process that lasts multiple years and begins in adolescence (Allen & Land, 1999). A number of changes that occur in adolescence are consistent with the idea that such generalized cognitive-emotional relationship models begin to form at this stage. As adolescents mature, there is an increase in formal operational thinking, metacognitive abilities, such as self-awareness (Sebastian, Burnett, & Blakemore, 2008), behavioural inhibition and planning (Anderson et al., 2001; Brocki & Bohlin, 2004), and social cognition, such as perspective taking and recognition of others' emotions, as well as changes in the brain regions associated with these abilities, such as in the medial prefrontal cortex (Blakemore, 2008; McGivern et al., 2002). These newly developing abilities, especially the increasing capacity to differentiate self and other, offer adolescents the possibility to consider abstract possibilities, compare and contrast different attachment experiences, and differentiate between their real attachment experiences and their attachment needs, whether met or unmet (Allen & Land). With adolescents increasingly seeking intimacy

through discussion and self-disclosure with close friends (McNelles & Connolly, 1999), a diversification of attachment figures also occurs in adolescence (Allen & Land). Thus, within this context, generalized expectations about others' availability can begin to form.

Despite these many changes and new opportunities, adolescents have an ongoing relationship with parents. Allen and Land (1999) raise the possibility that the finding of continuity of attachment security with parents from infancy to adolescence might reflect the stability of parents' sensitivity and responsivity over time. They suggest that attachment in adolescence might reflect both continuously developing internal working models that eventually generalize to other relationships *and* a cognitive and behavioural strategy to continuously adapt to parents' ongoing behaviours. Thus, a full examination of the impact of attachment on social abilities in adolescence should differentiate between attachment style with primary attachments and general attachment orientations.

In the current study, general attachment style is operationalized as avoidance or discomfort with emotional intimacy with and anxiety about the emotional availability of others in general, whereas attachment style with parents is operationalized using the same dimensions, but making them specific to the maternal or paternal relationship. Given their newly developing capacity for abstraction and logic, it is plausible that some adolescents will perceive a difference in their parents' availability versus the availability of close friends. That is, general attachment, albeit theoretically impacted largely by attachment to parents, will likely be affected by experiences in other relationships as well. In the quest to clarify the definition of attachment in adolescence, measuring both attachment style to parents and generalized attachment is imperative.

Attachment and Conflict

Attachment behaviours are thought to be particularly activated when there is a threat to the relationship (Bowlby, 1980). Conflict within friendships has been recognized as potentially relationship threatening (Laursen, 1993; Laursen, Hartup, & Koplas, 1996), and thus likely to activate the attachment system and trigger cognitions and behaviours associated with particular attachment styles. The more secure in relationships one is and the more comfortable one is with closeness, the less threatening the conflict would seem, and the more likely one would be to engage in constructive management strategies such as discussion of the conflict. The less one feels threatened, the more one could openly and confidently discuss one's emotions and point of view and respond constructively to the conflict partner's concerns. In this scenario, constructive conflict resolution such as cooperation, compromise or negotiation is the most likely. In contrast, the more uncomfortable with emotional closeness one is, the more discomfort one would experience during discussion of the conflict and the less likely one would be willing to open up and respond to others' concerns. Similarly, conflict would appear threatening to those who are anxious about being rejected by others or their availability. Such individuals would likely be less confident that their concerns are valid, less willing to assert their position constructively, and have negative expectations and interpretations of their conflict partner's behaviour.

Most empirical investigations on the topic find that the more secure individuals are in relationships in general, as measured by self-report questionnaires, the more constructively they resolve conflict with romantic partners or mothers, and, conversely, that insecurity is related to less positive strategies, regardless of whether conflict

resolution is measured with romantic partners, friends, or mothers. For example, in adult samples, the more secure individuals rate themselves in close relationships in general on the Attachment Style Questionnaire (Feeney, Noller, & Hanrahan, 1994), the more integration and compromise and the less avoidance of conflict are reported with romantic partners (Corcoran & Mallinckrodt, 2000). In contrast, the more these individuals rate themselves as having anxious or avoidant attachment in these relationships in general, the more avoidance of conflict and the less compromise they report with their partners. Similarly, the more attachment avoidance and anxiety late adolescents (age 20 on average) report in close relationships in general (using Griffin & Bartholomew's (1994) Relationship Styles Questionnaire), the less positive conflict management skills and the more conflict negativity, escalation, and withdrawal they report with romantic partners (Creasey, Kershaw, & Boston, 1999; Creasey & Hesson-McInnis, 2001). Late adolescents who report being more anxiously attached to their romantic partners have also been observed to engage in more contempt and domineering behaviour during a conflict task with their romantic partner (Creasey & Ladd, 2005). Studies using the Adult Attachment Interview (AAI) with late adolescents have similar findings: adolescents rated secure on the AAI were observed to have less negative conflict behaviours, including domineering and defensive behaviour, during a conflict task with a romantic partner than adolescents with anxious or avoidant attachment (Creasey, 2002, Creasey & Ladd, 2005). Similarly, adults more secure on the AAI were observed to collaborate more during an observed conflict task with their romantic partner (Roisman et al., 2007). Findings are more mixed when dismissing and preoccupied adolescents are compared, with some studies finding that dismissing late adolescents engage in more negative

conflict behaviour than preoccupied adolescents (Creasey & Ladd, 2004; Creasey & Ladd, 2005), and others not finding significant differences (Creasey, 2002).

Fewer studies have investigated the relation between attachment and conflict resolution with friends, but results are similar, albeit less strong, to those with respect to romantic partner. For example, Bippus and Rollin (2003) found that adults who rate themselves as secure in general are rated by their friends as using more prosocial and integrating behaviour during conflict. Similarly, in their study of late adolescent girls, Creasey, Kershaw, and Boston (1999) found that the more girls reported being avoidantly or anxiously attached in close relationships, the more they reported engaging in conflict negativity and escalation with best friends. However, only a trend was found for more avoidantly attached girls to engage in less positive conflict resolution skills and for both anxious and avoidant girls to engage in more withdrawal.

There are few studies that examine the relation between attachment and conflict resolution in early or middle adolescence, and those that do examine conflict with parents, not close friends. For example, middle adolescents who were more securely attached on the AAI were observed to engage in less avoidance of problem solving and in more balanced assertiveness with their mothers during a problem-solving task (Kobak et al., 1993). Likewise, early adolescents secure with their mother were less likely to withdraw from conflict and tended to negotiate/compromise more with parents than dismissing adolescents (Ducharme, Doyle, & Markiewicz, 2002).

Overall, it appears that attachment security is positively associated with more engagement in constructive conflict strategies and that the more insecure adolescents are in their relationships, the more negativity/escalation, contempt, domineering, or defensive

and withdrawing behaviour they engage in. However, thus far, no clear pattern differentiating the conflict behaviour of adolescents more anxiously attached versus those more avoidantly attached has been established. Furthermore, in most studies, attachment was operationalized as self-reported attachment orientations in relationships in general (not with a specific partner) or, using the AAI, as one's state of mind with respect to early attachment experiences. However, basic to attachment theory is the understanding that the relationship with parents affects relational competence with close others later in life. Only two studies have focused on the association of attachment to parents specifically and conflict behaviour with peers (Ducharme, Doyle, & Markiewicz, 2002; Dwyer et al., 2010). Thus, the basic hypothesis of attachment theory mentioned above requires further study.

Four models have been proposed by van IJzendoorn, Sagi, and Lambermon (1992) to conceptualize the ways in which attachments to multiple caregivers might be related to personality development. The *monotropy model*, in which only one main caregiver has an effect, the *hierarchy model*, where the primary attachment figure has the largest effect on personality development with additional caregivers having weaker effects, the *independence* model, in which mothers and fathers are equally important but contribute to different aspects of personality development, and the *integration* model, in which all attachment figures together impact on later outcomes (i.e., where both mothers and fathers contribute to the same personality domains, but not necessarily equally, with a stronger effect for mothers *or* fathers) . Thus far, when gender of the adolescent is taken into account, the available research indicates that depending on the outcome studied, most often the independence or the integration models are supported in adolescence. For

example, in a recent study by Dwyer and colleagues (2010), attachment to both parents was positively associated with conflict resolution abilities with friends for girls, whereas only attachment to mother was a predictor for boys.

In general, with respect to attachment and social competence, findings regarding adolescent and parent gender vary. Some studies have found support for the independence model, finding that attachment to only one parent is predictive of social competence. For example, Doyle & Markiewicz (2009) found that only avoidant attachment with father predicted same-sex peer competence two years later, for both boys and girls. Other studies have found that attachment to mother predicts somewhat different aspects of adolescent self-concept than attachment to father. For example, Doyle, Markiewicz, Brendgen, Lieberman, and Voss (2000) found that although attachment to both parents was associated with adolescents' global self-worth, attachment to mother was associated with self-perceptions of physical appearance, whereas attachment to father was associated with perceived school competence. Yet other studies have found that attachment to parents predicted certain aspects of social competence for only one adolescent gender. For example, whereas attachment to mother and father was associated with empathy for boys only, attachment to parents predicted prosocial behaviours for girls only and attachment to mother was predictive of close-friend competence for girls only (Kenny & Gallagher, 2002; Michiels, Grietens, Onghena, & Kuppens, 2010). Lastly, some studies have found some support for a modified integration model in that although attachment to both parents is associated with social competence, the same-sex parent is more predictive for a given adolescent gender. For example, although attachment to both parents was associated with peer problems for boys, attachment to mother predicted more

of the variance in girls' peer problems than attachment to father (Michiels et al., 2010). Likewise, attachment to father was a stronger predictor of social adjustment and efficacy for male university students than attachment to mother, whereas for females, attachment to both parents was equally predictive (Rice, Cunningham, & Young, 1997). Given these mixed findings and the fact that only a few studies have examined the contribution of attachment with mother and father separately to conflict resolution with boys *vs.* girls (Ducharme, Doyle, & Markiewicz, 2002; Dwyer et al., 2010), the roles of parent and adolescent gender in moderating the association between attachment and conflict management with friends requires further investigation.

In addition to gender as moderator, several mediators of the relation between attachment in close relationships in general and conflict behaviour have been investigated, including the experience of negative emotions during conflict, confidence in regulating one's own negative mood or in regulating one's own behaviour during conflict, social self-efficacy, and perspective taking ability, mostly finding partial mediation (Corcoran & Mallinckrodt, 2000; Creasey, Kershaw, & Boston, 1999; Creasey & Hesson-McInnis, 2001). However, mediating variables specific to the relation between attachment to *parents* and conflict behaviours with friends remain to be identified. For example, although the relationship between attachment to parents and social competence is often explained through beliefs and expectations about relationships that are generalized to interactions with others in general, this mediational process is rarely investigated explicitly.

Lastly, basic to attachment theory is the argument that attachment quality with parents sets the stage for social competence with others, and not vice versa. Associations

between attachment security and social competence, or between attachment insecurity and social and emotional difficulties, are hypothesized to be directional: attachment style with parents is supposed to contribute to beliefs about close relationships in general, which then set the context for quality of interpersonal interaction. The directionality of this hypothesis however, can best be tested through longitudinal investigations, of which there is a dearth in the study of the relation between attachment and conflict. Thus far, extant studies have examined the concurrent association between attachment and conflict resolution (Corcoran & Mallinckrodt, 2000; Creasey & Hesson-McInnis, 2001; Creasey, 2002; Creasey & Ladd, 2004, 2005; Ducharme, Doyle, & Markiewicz, 2002; Dwyer et al., 2010; Kobak et al., 1993).

In order to address the issues noted above, the current study was conducted with early adolescents, followed longitudinally over three years. It examines adolescents' reports of conflict behaviour with a best friend, thus directly measuring the association between attachment with parents and social behaviour with non-romantic close others outside of the family. Furthermore, it includes measures of attachment with parents as well as attachment beliefs and expectations in relationships in general, thus allowing an investigation of whether the generalization of attachment is associated with later conflict resolution with others. Lastly, attachment to each parent is measured separately in order to best estimate the relative impacts of attachment to mother versus father on conflict resolution abilities of boys and girls.

Specifically, the present study aims to address the potential impact of the attachment relationship with mother and father separately on conflict behaviour within friendships three years later, and to understand the process by which this occurs. The

study's longitudinal nature permitted the examination of the importance of attachment with parents in early adolescence to social abilities in later adolescence. In order to understand the process underlying this relation, structural equation modeling was used to compare a number of statistical models: the direct models, in which anxiety about the availability of parents and avoidance of intimacy with parents directly predict the various conflict management strategies with best friend three years later, and a number of mediational models, in which the relationship between the two insecure attachment dimensions and the conflict management styles is explained by two proposed mediators.

Hypotheses: Attachment as predictor of friend conflict management

Four hypotheses regarding the direct relation between the two insecure attachment dimensions and three conflict resolution strategies (cooperation, avoidance of conflict, and stalemate) were posited. Our first two hypotheses were that the more adolescents were avoidantly or anxiously attached to their mother or father at age 13, the less they would engage in collaborative conflict resolution with their best friend three years later. The third hypothesis was that the more adolescents were avoidantly attached to their mother or father, the more they would engage in avoidance of conflict with their best friend three years later.

Anxiously attached adolescents, with the constant fear of rejection, likely attempt to discuss the conflict with their friends, but have difficulty doing so skilfully and cooperatively. Anxiously attached adolescents have been shown to be prone to strong emotions such as anger more than securely or avoidantly attached individuals. For example, Creasey and Hesson-McInnis (2001) found that adolescents with more anxious attachment orientations in close relationships in general reported more intense feelings of

anger, sadness, and fear during conflict with romantic partners than adolescents with more secure or avoidant attachment. These strong emotions would motivate expression of the disagreement, but perhaps in a less cooperative manner. By virtue of their fear of rejection and abandonment, anxiously attached adolescents would be highly motivated to maintain the relationship. Unable to engage in calm collaboration or avoid the conflict when distressed, they would likely choose to express their discomfort in a more indirect manner, in an effort to maintain their seemingly fragile friendship.

Stalemate, the third conflict strategy investigated, refers to just such behaviours during conflict, behaviours that indirectly address the point of contention, expressing disagreement or annoyance (and therefore not avoiding conflict), but not working together toward a solution. Stalemate includes behaviours such as sulking, giving the silent treatment, or bickering or complaining without getting anywhere. Given the ambivalent quality of this conflict resolution style, the fourth hypothesis of the current study is that attachment anxiety with mother or father at age 13 would be positively associated with stalemate behaviours with their best friend three years later.

Mediational Hypotheses

The first mediational hypothesis is based on a basic premise of attachment theory. That is, attachment style with parents generalizes to other relationships, thus setting the context for relating within these other relationships. More specifically, the first mediational hypothesis is that attachment anxiety with others in general mediates the relation between anxious attachment with parents at age 13 and conflict resolution style three years later, and that attachment avoidance in relationships in general mediates the

relation between attachment avoidance with parents at age 13 and conflict resolution style three years later (see *Figure 1a* for proposed path diagram).

Attachment insecurity with parents might also lead to the use of ineffective conflict resolution strategies within the relationship with parents, which are then learned and later used with best friends. That is, rather than attachment generalizing to other relationships, conflict resolution style with parents, as attachment with parents, would generalize to other relationships. This latter hypothesized process involves the *practice* of collaborative conflict resolution *by the adolescent* with parents over time, because such collaboration is possible and encouraged in a secure relationship with parents where confidence that one is loved and trust in parents abound. Alternatively, in an insecure relationship with parents, where collaboration might not be possible or encouraged, more destructive conflict resolution strategies might be employed by adolescents and practiced with parents over time. Such conflict management strategies would then become habitual and then be used with close others years later. Therefore, the second mediational hypothesis is that conflict resolution with mother/father mediates the relation between attachment insecurity with mother/father (both anxious and avoidant attachment) at age 13 and conflict resolution with best friend three years later. (see *Figure 1b*).

It is important to note that both proposed mediational models are possible and might occur simultaneously, or perhaps might explain the relation between different attachment and conflict management variables. Indeed, it is plausible that attachment with parents both generalizes to other relationships *and* influences how adolescents manage conflict with parents, and that both general attachment and conflict management

with parents then impact on how adolescents behave during conflict with their best friend.

Method

Participants

Participants were 205 adolescents (52% girls) attending an English-language high school and participating in a larger 6-year longitudinal study designed to examine adolescent social and emotional development. There were 205 participants in the first year of the study, a number that decreased to 164 at Time 2, 176 at Time 3, 172 at Time 4, and 134 at Time 5 (when 60% had graduated).

In the first year of the study, participants were 13 years old (SD = 1.30), enrolled in grades 7 (43%) and 8. Of the adolescents who reported a single ethnic background (67%), the majority identified as "Other European" (42%) and British/Irish (31%), and others as "French", "Asian", or "South-West Asian" (6% each), "West Indian" (4%), or "Aboriginal" (1%). Adolescents reporting two (19%) or three (12%) ethnic backgrounds primarily identified themselves as a combination of English and French Canadian (39%) or "other" ethnicities (61%). Participants came from lower to middle social-economic family backgrounds, as obtained from the work status, occupation, and education of parents, characteristic of skilled craftsmen, clerical and sales workers (M = 33.85, SD = 8.75; Hollingshead, 1975). Seventy-three percent of the participants came from two-parent homes, 82% of which were intact families and 18% were reconstituted. Of the participants from single parent homes, the great majority lived with their mother (89%).

Measures

Attachment insecurity was measured using an adaptation of the Experiences in Close Relationships questionnaire (Brennan, Clark, & Shaver, 1998). Attachment insecurity was measured in relation to mother, to father, and to others in general by adapting the original questionnaire to each of these relationships. The adapted ECR had two subscales, each containing 12 items, selected from the original 18 items using the highest item-scale correlations in an earlier similar sample of 175 adolescents. Anxiety about emotional availability includes items such as "I worry that my mother/father/others don't care about me as much as I care about her/him/them. The avoidance of emotional closeness subscale includes items such as "I try to avoid being too close to my mother/father/others." Both subscales have good reliability. That is, for anxiety, the Cronbach's alpha ranged from .84 to .85 (mother α =.84, father α = .84, others α = .85). Similarly, for avoidance the alpha ranged from .68 to .92 (mother α =.92, father α = .91, others α = .68).

Conflict resolution strategies were measured using the Conflicts and Problem Solving Scales (CPS), adapted from Kerig (1996), asking for the frequency of use of various conflict management behaviours with mother, father, and best friend. The CPS was adapted in an earlier similar sample by omitting items inappropriate to adolescents (i.e. items relating to adult marital conflicts) and selecting from the original items using the highest item-scale correlations. The adapted CPS had three subscales: collaboration, avoidance of conflict, and stalemate. The collaboration subscale had 5 items and contained items such as "When dealing with conflict with X, how often do you compromise, meet the other half way". The Cronbach's alphas for this subscale ranged

from .79 to .92. The avoidance of conflict subscale had 3 items, was made up of items assessing the frequency of behaviours such as "Chang[ing] the subject " or "leav[ing] the room." The Cronbach alphas for this subscale ranged from .77 to .83). The stalemate subscale also had 3 items, measuring the frequency of behaviours such as "sulk," "silent treatment" or "complain without getting anywhere." The Cronbach alphas for this subscale ranged from .64 to .76.

Lastly, to control for defensive responding, a short form of the Marlowe-Crowne Social Desirability Scale (Strahan & Gerbasi, 1972) was used. This questionnaire measures the tendency to project favorable images of oneself, consists of 15 items and had a Cronbach's alpha ranging from .68 to .74 depending on the year.

Procedure

Permission to conduct the study was obtained from the local school board and the principal of the school. Thereafter, permission from the principal was obtained yearly in order to continue collecting data. Students were invited to participate in the project by visiting their classrooms, describing the study (verbally and with a letter) and providing them with consent forms to be signed by the adolescents and their parents (if the adolescents were under 14). All students returning a consent form were entered in a draw for music/movie gift certificates. In the first year of the study, approximately 48% of the students invited to participate agreed to do so, 39% gave no response, 13% refused, and 1% were repeatedly absent during testing. In subsequent years of the study, all those who participated in the first year of the study were invited to do so again (see sample size per year above). Participants completed questionnaires in groups of 15 students at school, twice a year, during a 40-minute class period, after which they were given a small

chocolate. They were also asked to indicate on a form whether they wished to be contacted by the school psychologist or one of the members of the research team. All participants were entered in a draw for a prize, a CD or MP3 player. In the last year of the study, more than half of the sample had graduated from the school and were therefore invited by mail, phone, and email to participate. Those who consented to participate were sent a link to a web-based questionnaire or mailed questionnaires if requested (n = 2) and involved in similar incentive and debriefing procedures.

Measures for the current study were taken from the larger study. Attachment to parents was measured yearly, but only taken from Time 1 for the present study (stability of attachment from T1 to T2, anxiety: r_{mother} = .62, r_{father} = .55; avoidance: r_{mother} = .69, r_{father} = .62, all p < .001). The dependent variable, conflict resolution style with best friend, was measured at Time 4 and Time 5 of the study, when the adolescents were 16 and 17 years old on average. This measure was not very stable from one time to another (r = .37, p<.01), perhaps because adolescents were answering based on different friendships from year to year; thus, an average of these two time points was used. Thus, the current study examines the relation between attachment to parents at age 13 and conflict resolution with best friend 3.5 years later, hereafter referred to as three years later.

Attachment to others in general, the postulated mediator, was measured at Time 2 of the study, when the participants were 14 on average. The measure of conflict resolution style with parents was taken at Time 3, when the participants were 15 on average. The two mediator variables were thus measured at different intermediate times in the larger study, both temporally after the measurement of the predictor variable and

before that of the outcome variable. Lastly, the social desirability questionnaire was given yearly and was moderately stable (median r =.59).

Results

Missing Data Analyses

Preliminary analyses were conducted to examine patterns of missing data. In the first year of the study, the percent of participants with missing data for one of the attachment measures ranged from 5%-10%. This percentage rose to approximately 20% for the study variables of the remaining years of the study, mostly due to attrition from year to year (see *Table 1*). Completed questionnaires were examined for response patterns. If participants answered a questionnaire randomly or with a non-meaningful pattern, their scale scores were defined as missing. Thus, missing data reflected either repeated absences, or having answered randomly or with a non-meaningful pattern (1.5%). The MCAR test (Little, 1988) yielded a significant chi-square (χ^2 (df) = 3815.26 (3542), $p<.001$), indicating that the data were not missing completely at random.

Multiple Imputation for Missing Data

Multiple imputation was chosen over other methods of handling missing data, such as listwise or pairwise deletion or substituting the mean, because such other methods can lead to underestimation of variability or biased parameter estimates (McKnight, McKnight, Sidani, & Figueredo, 2007). Multiple imputation was conducted using the *Amelia II* Program (Honaker, King, & Blackwell, 2006-2008; King, Honaker, Joseph, & Scheve, 2001), which implements an algorithm called *EMis* to impute missing data based on the existing study data. The imputation model included all the variables of the hypothesized mediational models, at the time points utilized in the current study as well

as all other available time points (e.g., Time 1 to 5 of attachment with mother and father), and demographic variables. Twenty "completed" data sets were created, which were then aggregated using the Aggregate function of SPSS. Rubin's (1987) formula

$$(1 + \gamma / m)^{-1}$$

was used to estimate the efficiency of an estimate based on m imputations, where γ represents the fraction of missing data, which in the present study averaged to 17%. In the current study, the 20 imputations resulted in 99% efficiency.

Preliminary Analyses

The means and standard deviations of the study variables are presented in *Table 1*. Social desirability at each time point was significantly correlated with all other time points of the study (r = .40 to .62, p < .001). Intercorrelations between predictor, mediator, and criterion variables, as well as with the mean of social desirability from Time 1 to Time 5, are shown in *Table 2*. Social desirability was significantly correlated with a number of variables, including attachment insecurity with mother, the three conflict management styles used with best friend, and conflict avoidance and stalemate with parents. Thus, social desirability was controlled in the remainder of the analyses. Whether or not to combine attachment to mother and father was considered by examining the partial correlations between these variables. Although attachment anxiety with mother and father were highly correlated (partial r = .77, p < .001), attachment avoidance with mother and father were not (partial r = .37, p < .001). Taking into account this discrepancy in overlap and our theoretical interest in the separate contributions of mother and father and potentially different mediational mechanisms underlying these relations, attachment to mother and father were kept as separate variables. The three conflict

resolution variables with mother and father were also highly correlated (partial r = .61, .73, .73 for collaboration, conflict avoidance and stalemate respectively, all $p < .001$). However, given that our interest was in mother and father separately, these variables were also kept separate.

Four multivariate analyses of covariance (MANCOVA) were conducted, always controlling for social desirability (mean of T1 to T5). In all cases, there was a significant multivariate main effect for social desirability. The first analysis was a gender X parent MANCOVA, with parent as a within-participant factor, evaluating the effects of gender of the adolescent and target parent on attachment anxiety and avoidance *with parents*. Results indicated an overall gender by parent interaction (Wilks' Λ = .92, F (2, 196) = 8.98, $p < .001$, multivariate η^2 = .08). A univariate effect was found for attachment anxiety (F (1, 197) = 6.40, $p < .05$, partial η^2 = .03) and for attachment avoidance (F (1, 197) = 9.67, $p < .05$, partial η^2 = .05), with a significant difference between boys' and girls' attachment avoidance with mother only, where boys reported significantly higher avoidance than girls (M = 3.15, SD = 1.10, *vs.* M = 2.67, SD = 1.38, t (198) = -3.15, $p <$ .01). These findings were consistent with a MANCOVA conducted to examine the effect of adolescent gender on attachment anxiety and avoidance *with others in general*. There was a multivariate main effect of gender (Wilks' Λ = .92, F (2, 201) = 8.62, $p < .001$, multivariate η^2 = .08), with a univariate effect for avoidance (F (1, 202) = 11.14, $p < .01$, partial η^2 = .05), where boys reported significantly higher avoidance with others in general than girls did (M = 2.99, SD = .78, *vs.* M = 2.63, SD = .91).

The effects of adolescent gender on the three conflict management styles used *with best friend* were also investigated, using a MANCOVA with collaboration, conflict

avoidance, and stalemate with best friend as the dependent variables. A multivariate main effect of gender was found (Wilks' Λ = .83, F (3, 200) = 14.15, p < .001, multivariate η^2 = .18), with a univariate effect only for collaboration (F (1, 202) = 38.34, p < .001, partial η^2 = .16), with girls reporting more collaboration than boys (M = 2.62, SD = .32, *vs.* M = 2.37, SD = .37). Lastly, the effects of gender of the adolescent and target parent on conflict management style *with parents* were examined using a gender X parent MANCOVA, with parent as a within-participant factor and collaboration, conflict avoidance, and stalemate as the dependent variables. Results revealed a multivariate main effect for parent (Wilks' Λ = .91, F (3, 194) = 6.61, p < .001, multivariate η^2 = .09), with a univariate effect for stalemate (F (1, 196) = 11.43, p < .01, partial η^2 = .06): adolescents reported more stalemate with mother than father (M = 1.27, SD = .75, *vs.* M = 1.12, SD = .71). There was an overall gender by parent interaction (Wilks' Λ = .95, F (3, 194) = 3.46, p < .05, multivariate η^2 = .05), with a univariate effect only for collaboration (F (1, 196) = 9.20, p < .01, partial η^2 = .05): girls tended to report more collaboration with mother than boys (M = 2.63, SD = 2.13 *vs.* M = 2.26, SD = .61, t (197) = 1.85, p < .10).

Statistical Design and Analysis

Structural equation modeling was conducted in order to analyze the data, using the *EQS 6.1 for Windows* Statistical Software (Bentler, 1985-2007). Analyses were conducted controlling for social desirability responding by using partial covariances, partialling out the social desirability average (Fletcher, Selgrade, & Germano, 2006). Three direct models were tested per parent, using a two-group analysis where boys and girls were compared. In each of the three models one of the three conflict resolution strategies at Time 4/5 was predicted from both attachment anxiety and avoidance with

mother or father at Time 1. Each model included the direct paths from attachment anxiety and avoidance to the conflict resolution strategy, and the covariance between anxiety and avoidance. Paths were constrained one by one to be equal for boys and girls. For each constraint, a Lagrange Multiplier test for releasing constraints was conducted. If the chi-square for that constraint was non-significant and the model fit did not worsen, the constraint was kept in the model. If the chi-square for that constraint was significant or the model fit worsened, the given path was left unconstrained.

Where at least one of the attachment variables predicted the conflict resolution strategy significantly for both or only one gender, both mediational hypotheses were tested in separate models (i.e., general attachment versus conflict resolution with parent as mediators). Mediators were tested in separate models because attachment with others in general was not correlated with the conflict management styles with each parent (see *Table* 2), thereby yielding independent findings. For each mediational model, the preconditions and criteria for mediation were tested, as outlined in Baron and Kenny (1986) and Preacher and Hayes (2004). As part of this process, the third precondition was tested using indirect models consisting of T1 attachment anxiety and avoidance with parent (mother or father, in separate models) predicting the mediator (either T2 anxiety and avoidance with others in general or T3 conflict resolution strategy with parent), which in turn predicted T4/5 conflict resolution strategy with best friend. These models also included the covariance between the two T1 attachment variables for mother or father and, when attachment to others in general was tested as mediator, the covariance between the T2 two attachment variables. Then, the direct paths were added to the indirect models. Sobel tests were conducted to establish whether each mediator

significantly carried the influence of the independent variable to the dependent variable. As well, the models with and without the direct path were compared via a χ^2 difference test.

For all models tested as described above, when paths were nonsignificant for both genders, they were removed from the model. In each postulated model, model fit was evaluated using the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA) because they are considered less sensitive to sample size than other fit indices (Fan, Thomas, & Wang, 1999). Criteria for a well-fitting model were that the CFI be above .90 and the RMSEA be smaller than or equal to .05 (Hu & Bentler, 1999; Kline, 2004).

The hypothesized models were tested using the aggregated multiple imputation data. Because this approach leads to biased standard errors (McKnight, McKnight, Sidani, & Figueredo, 2007), study parameters that involve standard errors should be interpreted with caution. Thus, although t-statistics and their significance levels associated with the various paths of each structural equation model were reported as is the convention, more emphasis was placed on the effect sizes of each path. Similarly, because the Sobel test statistic was computed using the standard errors associated with the path coefficients of a mediational model, the Sobel test statistic was reported as per convention, but more emphasis was placed on other methods of assessing mediation, such as examining whether the direct path loses prediction strength and whether the chi-squares of the mediational model with and without the direct path are significantly different.

Overview of Results

Overall, direct effects, supporting the hypotheses, were found for collaboration and stalemate with best friend. The hypothesis that avoidant attachment with parents would predict later conflict avoidance with friend was not supported. However, unexpectedly, boys' attachment anxiety with father positively predicted conflict avoidance with friend. All preconditions for mediation were met, for one or both adolescent genders, with the exception of preconditions for general anxious attachment to mediate the relation anxious attachment with father and conflict avoidance with friend.

Attachment avoidance with either parent negatively predicted collaboration with best friend. For both parents, this relation was mediated by general avoidant attachment. For the relationship with father, collaboration with father also mediated. There was a trend for a similar mediation by collaboration with mother, for girls only. Furthermore, for boys only, attachment anxiety with either parent predicted both friend collaboration and stalemate in the expected directions. General anxious attachment tended to fully mediate the relation between boys' anxious attachment with mother and collaboration with friend. Lastly, the relations between anxious attachment with father and conflict avoidance or stalemate with friend were mediated by conflict avoidance or stalemate with father. These results are described in more detail below.

Predicting Collaboration

Direct Models. The direct model predicting collaboration with best friend from attachment anxiety and avoidance with mother fit the data well (χ^2 (df) = .46 (2), p = .80, CFI = 1.00, RMSEA = .00), as did the direct model predicting collaboration from

attachment with father (χ^2 (df) = .05 (2), p = .97, CFI = 1.00, RMSEA = .00). The first hypothesis was supported: avoidant attachment with mother negatively predicted collaboration with best friend for boys and girls, explaining 1% and 2% of the variance respectively (standardized path coefficients = -.10, -.14, respectively, both p < .05); and avoidant attachment with father tended to negatively predict collaboration for boys and girls (standardized path coefficients = -.08, -.11, respectively, p < .10). The second hypothesis was supported for boys only: boys' collaboration with friend was predicted from both attachment anxiety with mother, which accounted for 3% of the variance (standardized path coefficient = -.18, p < .05), and anxiety with father, which explained 6% of the variance (standardized path coefficient = -.25, p < .05).

Testing for Mediation by attachment to others in general. The indirect model fit the data well for the relationship with mother (χ^2 (df) = 10.48 (13), p = .65, CFI = 1.00, RMSEA = .00), as did the indirect model for father (χ^2 (df) = 9.09 (13), p = .77, CFI = 1.00, RMSEA = .00). The second and third preconditions for mediation were fulfilled in both models. That is, attachment avoidance with mother at age 13 significantly predicted general attachment avoidance at age 14 for boys and girls, explaining 6-7% of the variance (standardized path coefficients = .24, .26, both p < .05), which in turn predicted collaboration with friend, explaining 5 and 8% of the variance respectively (standardized path coefficients = -.23, -.29, both p < .05). Similarly, in the model for father, attachment avoidance with father at age 13 significantly predicted general attachment avoidance at age 14, explaining 4% of the variance (standardized path coefficients = .20 for boys, .21 for girls, both p < .05), which in turn predicted collaboration with friend, explaining 4 and 7% of the variance respectively (standardized path coefficient = -.21, -.27, both p <

.05). With respect to the preconditions for the attachment anxiety-collaboration link found for boys only, boys' anxious attachment with mother significantly predicted anxious attachment to others in general (standardized path coefficient = .41, $p < .05$), and in the model for father, boys' anxious attachment with father also did so, predicting 11% of the variance in general attachment anxiety (standardized path coefficient = .33, $p < .05$). In both models, general attachment anxiety significantly predicted collaboration with best friend (standardized path coefficient = -.20, $p < .05$).

In order to complete the mediational tests, the direct paths between the two attachment variables with each parent and collaboration with friend were added to the indirect models, yielding models that fit the data well (mother: χ^2 (df) = 8.04 (10), p = .63, CFI = 1.00, RMSEA = .00, see *Figure 2*; father: χ^2 (df) = 4.46 (10), p = .92, CFI = 1.00, RMSEA = .00, see *Figure 3*), as well as the models without the direct paths did (mother: $\Delta\chi^2$ (Δdf) = 2.44 (3), $p = .49$; father: $\Delta\chi^2$ (Δdf) = 3.81 (3), $p = .28$). Compared to the direct models, the direct paths between attachment avoidance with mother and collaboration with friend were no longer significant for boys or girls (standardized path coefficient = -.05, -.06, respectively, *n.s.*); and the direct paths between attachment avoidance with father and collaboration with friend were no longer a trend (standardized path coefficient = -.04, -.06, respectively, *n.s.*). In addition the Sobel's test yielded a significant test statistic for the relationship with mother (– 2.38, p<.05, 2-tailed) and for father (boys: – 2.28, girls: -2.05, both $p < .05$, 2-tailed). That is, general avoidant attachment to others significantly carried the influence of attachment avoidance with mother or father to collaboration with friend. Thus, general attachment avoidance was

found to mediate fully the relation between attachment avoidance with mother or father and collaboration with best friend for both adolescent genders.

For boys only, in the combined model, anxious attachment with mother no longer predicted collaboration with friend (standardized path coefficient = -.13, *n.s.*). The Sobel test statistic for the mediated path tended toward significance (– 1.61, p =.10, 2-tailed), indicating that general anxious attachment tended to carry the influence of anxious attachment with mother to collaboration with friend. Thus, for boys only, there was a trend for anxious attachment to others in general to fully mediate the relation between anxious attachment with mother and collaboration with best friend. However, the equivalent mediation was not found for the relation between boys' anxious attachment with father and collaboration with friend, as this association remained significant in the combined model and the indirect path between general anxiety and collaboration with friend lost its significance.

Testing for mediation by collaboration with each parent. The indirect model for mother fit the data well (χ^2 (df) = 7.13 (7), p = .42, CFI = 1.00, RMSEA = .01). However, the indirect model for father fit the data poorly (χ^2 (df) = 9.77 (6), p = .13, CFI = .87, RMSEA = .08). Because a large residual was found for the direct path between attachment anxiety with father and collaboration with friend, this path was added to the model, yielding a new model that fit the data well (χ^2 (df) = 3.36 (4), p = .50, CFI = 1.00, RMSEA = .01). In the model for mother, avoidant attachment with mother significantly predicted collaboration with mother for boys, and tended to do so for girls (standardized path coefficients = - .32, p < .05; -.15, p <.10, respectively; i.e., 8% more variance in collaboration with mother for boys than girls). In addition, girls' collaboration with

mother significantly predicted collaboration with friend, explaining 9% of the variance (standardized path coefficient = .30, $p < .05$), thus fulfilling preconditions for mediation for girls only. In the model for father, avoidant attachment with father significantly negatively predicted collaboration with father, explaining 8% of the variance for boys and 12% for girls (standardized path coefficients = - .29, -.24, both $p < .05$), and collaboration with father significantly accounted for 2% (boys) and 3% (girls) of the variance in collaboration with friend (standardized path coefficients = .15, .18, $p < .05$), thus meeting the two preconditions for mediation for both genders. In contrast, anxious attachment with mother or father did not significantly predict collaboration with mother or father, thus precluding the hypothesized mediation of the relation between boys' anxiety with each parent and friend collaboration.

The direct paths between the two attachment variables with mother and collaboration with friend were added to the indirect model for mother, yielding a model that fit the data well (χ^2 (df) = 1.11 (3), $p = .78$, CFI = 1.00, RMSEA = .00, see *Figure 4*). Similarly, the direct path between the avoidant attachment with father and collaboration with friend was added to the indirect model for father, also yielding a model that fit the data well (χ^2 (df) = 2.90 (5), $p = .72$, CFI = 1.00, RMSEA = .00, see *Figure 5*). Neither model was significantly different than the models without the direct paths (mother: $\Delta\chi^2$ (Δdf) = 6.02 (4), $p = .20$; father: $\Delta\ \chi^2$ (Δdf) = .46 (1), $p = .49$). Given the relations described above, collaboration with mother was only examined as mediator for the relation between attachment avoidance with mother and collaboration with friend for girls. Compared to the direct model, the direct path between girls' attachment avoidance with mother and collaboration with friend was no longer significant. Similarly, in the

model for father, the direct path between attachment avoidance with father and collaboration with friend was no longer a trend for either boys or girls. The Sobel's test statistic tended toward significance for mother (– 1.51, $p < .07$, 1-tailed) and was significant for father -2.05 ($p < .05$, 2-tailed). That is, collaboration with father carried the trend-level influence of attachment avoidance with father on collaboration with friend, and collaboration with mother tended to carry the influence of avoidance with mother for girls. Thus, collaboration with father mediated fully the trend between attachment avoidance with father and collaboration with best friend for both genders, and collaboration with mother tended to mediate fully the relation between attachment avoidance with mother and collaboration with best friend for girls only.

Predicting Avoidance of conflict

Direct models. The direct model predicting conflict avoidance with best friend from attachment anxiety and avoidance with *mother* three years earlier fit the data well (χ^2(df) = 1.29 (2), $p = .53$, CFI = 1.00, RMSEA = .00), as did the equivalent model for the relationship with father (χ^2 (df) = .06 (2), $p = .97$, CFI = 1.00, RMSEA = .00). The third study hypothesis, that avoidant attachment with parents would predict an increase in conflict avoidance with best friend, was not supported. Although not hypothesized, attachment anxiety with mother significantly predicted conflict avoidance for both boys and girls, but in different directions: anxiety with mother positively predicted 4% of the variance in conflict avoidance with best friend for boys, but negatively predicted 3% of the variance for girls. Attachment anxiety with father was also positively associated with conflict avoidance with best friend for boys only (standardized path coefficient = .25, $p < .05$). Given the unexpected relations with anxious attachment described above, the

mediational models were tested in order to examine whether anxious attachment in general and conflict avoidance with mother or father mediated the relation between anxious attachment with mother/father and conflict avoidance with best friend three years later.

Testing for mediation by general attachment. For the relationship with mother, the indirect model fit the data moderately well (χ^2 (df) = 14.61 (13), p = .33, CFI = .98, RMSEA = .04). Although attachment anxiety with mother significantly predicted general attachment anxiety for both boys and girls (standardized path coefficients = .37, .29, both $p < .05$), general anxious attachment did not predict conflict avoidance with best friend for either gender (standardized path coefficient = .06, *n.s.*), thus ruling out mediation. Similarly, mediation by general attachment anxiety was not present for the relation found for boys only between attachment anxiety with father and conflict avoidance with friend because general anxiety again did not predict conflict avoidance with best friend (standardized path coefficient = .05, *n.s.*) when attachment to father was in the indirect model (tested for boys only, χ^2 (df) = 5.01 (4), p = .28, CFI = .96, RMSEA = .05).

Testing for mediation by conflict avoidance with parents. The indirect model for mother did not fit the data well (χ^2 (df) = 11.72 (8), p = .16, CFI = .87, RMSEA = .07): conflict avoidance with mother significantly predicted conflict avoidance with best friend for both boys and girls (standardized path coefficient = .23, .25, both $p < .05$), but attachment anxiety with mother did not predict conflict avoidance with mother for either gender (standardized path coefficient = .06, .04, *n.s.*), thus not meeting one of the preconditions for mediation.

The indirect model involving conflict avoidance with father as potential mediator, tested for boys only, fit the data moderately well (χ^2 (df) = 3.01 (2), p = .22, CFI = .95, RMSEA = .07). Attachment anxiety with father significantly predicted 8% of the variance in conflict avoidance with father (standardized path coefficient = .29, $p < .05$), which in turn significantly predicted 10% of the variance in conflict avoidance with best friend (standardized path coefficient = .32, $p < .05$). The direct path between the anxious attachment with father and conflict avoidance with friend was added to the indirect model, yielding a model that fit the data well (χ^2 (df) = .68 (1), p = .41, CFI = 1.00, RMSEA = .00, see *Figure 6*) and was not significantly different than the model without the direct path ($\Delta \chi^2$ (Δdf) = 2.33 (1), p = .13, 1-tailed). The direct path between attachment anxiety with father and conflict avoidance with friend was no longer significant (standardized path coefficient = .15, *n.s.*). The Sobel's test statistic was significant (1.92, $p < .05$, 1-tailed), indicating that conflict avoidance with father carried the influence of anxiety with father to conflict avoidance with friend. Thus, conflict avoidance with father fully mediated the relation between boys' anxious attachment with father and conflict avoidance with their best friend.

Predicting Stalemate

Direct models. The direct model predicting stalemate with best friend from attachment anxiety and avoidance with *mother* three years earlier fit the data well (χ^2 (df) = 1.06 (2), p = .59, CFI = 1.00, RMSEA = .00), as did the equivalent model for father (χ^2 (df) = .11 (2), p = .94, CFI = 1.00, RMSEA = .00). The fourth hypothesis was supported for boys only: boys' attachment anxiety with mother significantly positively predicted 10% of the variance in stalemate with best friend (standardized path coefficient = .31, $p <$

.05), and their attachment anxiety with father significantly predicted 7% of the variance in stalemate with friend (standardized path coefficient = .26, $p < .05$). Interestingly, attachment avoidance with mother, but not father, negatively predicted stalemate with best friend for both boys and girls, explaining 3% and 4% of the variance respectively (standardized path coefficient = -.18, -.20, $p < .05$).

Testing for mediation by general attachment. General attachment did not mediate the relations found between attachment with mother or father and stalemate with friend. The indirect model for mother fit the data poorly (χ^2 (df) = 22.87 (11), $p = .02$, CFI = .87, RMSEA = .10). When the direct paths were added to the indirect model, the new model fit the data well (χ^2 (df) = 2.91 (7), $p = .89$, CFI = 1.00, RMSEA = .00), significantly *better* than the model without the added direct path ($\Delta \chi^2$ (Δdf) = 19.96 (4), $p < .001$), indicating that mediation was not likely and that attachment with mother continued to be an important predictor, even in the presence of the general attachment variables. In addition, this model was not significantly better than the direct model ($\Delta \chi^2$ (Δdf) = 1.85 (5), $p = .87$).

The indirect model for father, tested for boys only, fit the data moderately well (χ^2 (df) = 5.23 (4), $p = .26$, CFI = .95, RMSEA = .06). Attachment anxiety with father significantly predicted attachment anxiety with others in general (standardized path coefficient = .34, $p < .05$), which in turn tended to predict stalemate with best friend (standardized path coefficient = .14, $p < .10$). However, when the direct path between anxious attachment with father and stalemate with friend was added to the model, the model fit the data very well (χ^2 (df) = .13 (3), $p = .99$, CFI = 1.00, RMSEA = .00), significantly *better* than the model without the direct path ($\Delta \chi^2$ (Δdf) = 5.10 (1), $p = .02$,

1-tailed), but not significantly better than the direct model ($\Delta \chi^2$ (Δdf) = .02 (1), p = .89). Furthermore, the direct path continued to be significant, with anxious attachment to father predicting 6% of the variance in stalemate with friend (standardized path coefficient = .24, p < .05), whereas the path between general attachment anxiety and stalemate with friend was no longer significant (standardized path coefficient = .05, *n.s.*).

Testing for mediation by stalemate with parents. Stalemate with mother did not mediate the relation between attachment with mother and stalemate with friend. The indirect model for mother fit the data poorly (χ^2 (df) = 22.23 (7), p = .00, CFI = .64, RMSEA = .15). For both boys and girls, anxious attachment with mother, but not avoidant attachment, significantly predicted stalemate with mother (standardized path coefficient = .21, .15, respectively, both p < .05). Similarly, for both genders, stalemate with mother significantly predicted stalemate with best friend (.22, .29, respectively, both p < .05). Thus, preconditions for mediation were only met for the relation found for boys only between anxious attachment with mother and stalemate with friend. Adding the direct paths from attachment with mother to stalemate with friend yielded a model that fit the data well, but significantly *better* than the model without the direct paths (χ^2 (df) = 2.56 (4), p = .63, CFI = 1.00, RMSEA = .00; $\Delta \chi^2$ (Δdf) = 19.67 (3), p < .001, 1-tailed; and not significantly better than the direct model, $\Delta \chi^2$ (Δdf) = 1.50 (2), p = .47, 1-tailed). In this model, the direct path between boys' attachment anxiety with mother and stalemate with friend continued to be significant (standardized path coefficient = .30, p < .05), with anxiety predicting 9% of the variance in stalemate, whereas the path between stalemate with mother and stalemate with friend was no longer significant (standardized path coefficient = .10, *n.s*), thus ruling out mediation.

The indirect model for father, tested for boys only, fit the data poorly (χ^2 (df) = 4.01 (2), p = .13, CFI = .89, RMSEA = .10). Anxious attachment with father significantly predicted 4% of the variance in stalemate with father (standardized path coefficient = .21, $p < .05$), which in turn significantly predicted 9% of the variance in stalemate with best friend (standardized path coefficient = .30, $p < .05$). Adding the direct path between the anxious attachment with father and stalemate with friend yielded a well-fitting model (χ^2 (df) = .15 (1), p = .70, CFI = 1.00, RMSEA = .00, see *Figure 7*), tending to be better than the model without the added direct path ($\Delta \chi^2$ (Δdf) = 3.86 (1), p = .05, 1-tailed). As compared to the direct model, the direct path between attachment anxiety with father and stalemate with friend decreased in strength, from accounting for 7% of the variance to 4%. In addition, the Sobel's test yielded a significant test statistic of 1.69 ($p < .05$, 1-tailed), indicating that stalemate with father carried the influence of anxiety with father to stalemate with friend. Thus, stalemate with father partially mediated the relation between boys' anxious attachment with father and stalemate with their best friend.

Discussion

Attachment with parents and conflict management with friends

Support was found for three of the four main hypotheses, with some gender-specifications. That is, the more adolescents were avoidantly attached to mother at age 13, the less cooperatively they managed conflict with their best friend three years later, a small effect. The same relation was found for father, but at a trend level. Hypotheses pertaining to anxious attachment were supported for boys only: the more boys were anxious about the emotional availability of both parents at age 13, the less they collaborated (a small and medium effect for attachment with mother and father,

respectively) and the more they used stalemate (a medium-sized effect for either parent) with their best friend three years later. In contrast to our hypothesis however, no relation was found between avoidant attachment with parents and conflict avoidance with friends.

Results with respect to collaboration are consistent with a number of studies finding a positive relation between attachment style and positive conflict management behaviours: secure adults are rated by their close friends as using more integrating behaviour during conflict, as well as more prosocial relationship maintenance behaviours in general (Bippus & Rollin, 2003). In addition, a negative relation was found between late adolescents' anxious and avoidant attachment in relationships in general and positive conflict behaviour with romantic partners (Creasey & Hesson-McInnis, 2001; Creasey, Kershaw, & Boston, 1999). Within the parental relationship, the present study found that the more adolescents avoided closeness with parents, the less they used collaboration with them. Furthermore, early adolescents secure with parents tended to use more negotiation/compromise with parents than dismissing adolescents (Ducharme, Doyle, & Markiewicz, 2002). The current study extends these results concerning positive conflict management to middle adolescents, focusing on attachment within the relationship with parents and conflict management with friends, and examining these associations across time.

With respect to stalemate, although its relation to attachment has not been previously examined to our knowledge, results found for boys were consistent with findings that the more late adolescents are anxiously attached in relationships in general, the more escalation and negativity, contempt (e.g., put downs, mockery, also somewhat indirect in nature), and domineering behaviour they engage in with romantic partners

(Creasey & Hesson-McInnis, 2001; Creasey & Ladd, 2005). In addition, the more adolescents were anxiously attached in relationships in general, the more they reported negative emotions during conflict with a romantic partner (Creasey & Hesson-McInnis, 2001). Thus, boys more anxious about the emotional availability of their parents are likely motivated to express anger during conflict. These strong emotions are likely most salient for them and make it difficult to simultaneously express emotions, consider the other's point of view carefully, and attempt to find a common solution. In contrast, stalemate reflects strategies predominated by the expression of negative feelings, rather than problem solving. Perhaps this manner of expressing disagreement or distress is viewed as less threatening to the relationship by boys anxiously attached to their parents, boys who, as will be discussed later, also often opt for conflict avoidance. For example, sulking, giving the silent treatment, and bickering without getting anywhere do not involve the task of stating directly one's displeasure with the other's behaviour, thus potentially putting the relationship at greater risk, but rather send an indirect message that something is upsetting without directly addressing the point of contention.

Contrary to prediction, attachment avoidance with parents was not associated with avoidance of conflict with best friend for either gender. The only other study to examine attachment with parents and conflict avoidance with peers also did not find a relation between the two variables, although the size of the subsample of adolescents reporting conflict with peers was small (Ducharme et al., 2002). However, in the current study, the more adolescents were avoidantly attached in relationships in general, the more they avoided conflict with their best friend (a small effect), consistent with findings that the more late adolescents or adults are avoidant in close relationships, the more withdrawal

or conflict avoidance they engage in with romantic partners, and in the case of girls, the more they tended to withdraw from conflict with best friends (Corcoran & Mallinckrodt, 2000; Creasey & Hesson-McInnis, 2001; Creasey, Kershaw, & Boston, 1999). It could be that attachment avoidance with parents predicts conflict avoidance with friends and that general avoidance mediates this relation in earlier adolescence or middle childhood, and that by middle adolescence, only the link between general avoidance and conflict avoidance with friend remains.

Although not hypothesized, a relation was found between anxious attachment and conflict avoidance for boys. The more boys were anxious about the availability of either parent, the more they avoided conflict with their best friend (only a trend for mother), consistent with the positive relation between anxious attachment in close relationships in general and conflict avoidance/withdrawal with romantic partners (Corcoran & Mallinckrodt, 2000; Creasey & Hesson-McInnis, 2001). Conflict avoidance could be motivated by the fear anxious adolescents experience during conflict, as compared to secure adolescents (Creasey & Hesson-McInnis).

With respect to adolescent gender, it appears that whereas comfort with emotional intimacy with parents is important to later use of collaboration for both genders, for boys, security about the emotional availability of parents is particularly important for all later conflict behaviours examined. For girls, no significant relation was found between anxious attachment to parents and conflict management with friends. Thus, it seems that anxious girls engage in discussion of the conflict perhaps neither in the skilled manner necessary for collaboration, nor through such indirect means as avoiding conflict, sulking or giving the silent treatment, but rather through other means, perhaps more direct and

affectively charged actions such as verbal aggression or dominating behaviour. Alternatively, the lack of relations between anxiety and collaboration or stalemate could be due to the possibility that girls anxious with mother fall into two opposing categories, those who are more skilled and able to use collaboration rather than stalemate, and those who cannot remain calm enough to collaborate, and instead express their fear or anger through stalemate.

Differences between mothers and fathers

Avoidant attachment with mother predicted both boys' and girls' collaboration with best friend slightly more strongly than avoidant attachment with father, for whom findings were at trend level. Furthermore, avoidance with mother, but not with father, predicted less stalemate with friend. With respect to anxious attachment, findings were more mixed. Whereas boys' attachment anxiety with father accounted for approximately twice as much variance in collaboration and conflict avoidance with friend as anxiety with mother (6% *vs.* 3-4%), boys' attachment anxiety with mother accounted for more variance in stalemate with friend than anxiety with father (10% *vs.* 7%). Thus, for boys, the relationship with father is more important to later conflict avoidance with friend, the relationship with mother is more important to later stalemate with friends, and relationships with both parents are important for later collaboration with friends, albeit more through comfort with intimacy with mother than father, and more through security about the availability of father than mother.

With respect to the models proposed by van IJzendoorn, Sagi, and Lambermon (1992), described earlier, the results for boys best fit the *integration* model, where attachment to both mother and father impact on later personality development, rather than

the other models where one parent might be more important, or attachment to each parent predicts different outcomes. In contrast, for girls, the relationship with mother appears to be more important to later conflict management with best friend than the relationship with father. Thus, for girls in middle adolescence, findings seem to fit the *hierarchy* model best, where the primary attachment figure has the largest effect and additional caregivers have weaker effects. These findings are inconsistent with those of Dwyer and colleagues (2010), who found that attachment to both parents was positively associated with positive conflict resolution with friends for *early* adolescent girls (M_{age} = 11.39), whereas only attachment to mother was a predictor for boys. Taking these findings into account and the new hypotheses regarding anxious attachment and more aggressive conflict management proposed earlier for girls, further research would need to broaden the conflict behaviours examined and continue investigating the attachment-conflict management link at different ages in adolescence before making final conclusions regarding the most adequate model for the impact of attachment to mother *vs.* father.

Lastly, findings with respect to anxious attachment are interesting in the context of the high correlation between anxious attachment with mother and father. Although significant findings with respect to anxiety with mother and father were similar, keeping these variables separate allowed for the examination of the different amounts of variance accounted for by anxiety with mother *vs.* father and different mediational pathways. However, given the high overlap in these variables, the current findings should be replicated with a larger sample, where attachment to mother and father could be examined in the same model.

Mediation of the relation between attachment with parents and collaboration with friend

Results indicated that both avoidant attachment to others in general *and* collaboration with parents mediated the relation between attachment avoidance with parents and collaboration with best friend. More specifically, general attachment avoidance fully explained the associations between avoidant attachment with each parent and later collaboration with friend. Furthermore, collaboration with father fully mediated the trend between attachment avoidance with father and collaboration with friend for both genders, whereas there was a trend for collaboration with mother to fully explain the relation for girls only. Given that these mediators are uncorrelated (see *Table 2*), these results are non-redundant. With respect to the relation between boys' anxious attachment with parents and collaboration with best friend, there was a trend for attachment anxiety with others in general to fully mediate the relation between boys' anxiety with mother and collaboration with friend. However, the relation between attachment anxiety with father and collaboration with friend was not found to be mediated.

The mediational results described above are interesting in that they provide support for both the generalization of comfort with emotional intimacy and security about the others' emotional availability to other relationships *and* the practice of collaboration with parents as mechanisms to explain the effect of attachment with parents on positive conflict management with friends. Consistent with these results, previous research has shown that adolescents more securely attached with their mother use more positive conflict management strategies with their parents, such as compromise or balanced assertiveness (Ducharme, Doyle, Markiewicz, 2002; Kobak et al., 1993). The results of the present study suggest that adolescents use more collaboration with their father when they are more comfortable being emotionally close with him, and that girls tend to use

more collaboration with their mothers when they are more comfortable being emotionally close with her, which in turn likely allows them to practice collaboration as a conflict management strategy and later use it with friends. In addition, this comfort with intimacy also seems to generalize to other relationships, and it is this generalized sense of comfort that also sets the stage for later collaboration with best friend. Similarly, for boys only, our results indicate that security about the emotional availability of the other also generalizes from the relationship with mother to close others, and that this generalized sense of security sets the stage for later collaboration with close friends. The question remains as to why comfort with emotional intimacy and security about the availability of others allow for such constructive behaviour during conflict.

Previous research has shown that the relation between general attachment orientations and positive behaviour during conflict can be explained, at least partially, by a number of variables. For example, Corcoran and Mallinckrodt (2000) found that the belief that one's social skills will lead to desired outcomes mediated the relation between secure attachment in relationships in general and compromising during conflict in a love relationship. Similarly, confidence in regulating one's behaviour during conflict seems to explain part of the negative relation between late adolescents' attachment anxiety and avoidance in relationships in general and positive behaviour during conflict with romantic partner (Creasey & Hesson-McInnis, 2001).

Based on these findings, attachment security with parents likely generalizes to other relationships and this general attachment security might then increase adolescents' sense of confidence with respect to their ability to efficaciously manage interpersonal interactions, which in turn would make them act more confidently and stay engaged

during conflict. Such confidence might well set the tone for calm discussion, encourage assertive self-disclosure, and represent the knowledge of a number of more specific skills that encourage intimate discussion, such as providing affection and being emotionally expressive. Indeed, secure attachment to mother was found to be associated with more emotional expressiveness during conflict (Ducharme et al., 2002) and the more late adolescent girls were avoidant in relationships in general, the less they were found to be affectionate and emotionally expressive, and the less they reported informing their romantic partners when their partners had done something to upset them (Creasey, Kershaw, & Boston, 1999).

Disagreement might be less threatening for adolescents more secure in their relationships and confident in their ability to manage interpersonal interaction, thus allowing them to listen more attentively to the other's concerns and respond appropriately. With respect to avoidant attachment, perspective taking might be very important to the process. In Creasey and colleagues'(1999) study, the more girls were avoidantly attached in general, the less they reported trying to understand and validate the other's point of view. Similarly, Corcoran and Mallinckrodt (2000) found that perspective taking mediated the relation between general avoidant attachment and adults' integrating behaviour during conflict with a romantic partner. Discomfort with emotional closeness impedes the repeated experience of intimacy and associated discussions, which in turn might impede learning to take others' perspectives. Without this skill, it would indeed be difficult to perceive, understand, and respond to the others' concerns.

With respect to anxious attachment, the disagreement inherent in a conflict discussion might lead to strong emotions that in turn make collaboration unlikely. Indeed,

Creasey and Hesson-McInnis (2001) found that experiencing fear partially mediated the negative relation between adolescents' general anxious attachment and positive behaviour during conflict with a romantic partner. Interestingly, in our study, a relation was found between attachment anxiety and collaboration for boys only, and this relation was mediated by general attachment anxiety. It could be that a proportion of anxiously attached girls still learn to collaborate with their friends through other means, such as through the higher level of discussion and self-disclosure in their friendships as compared to boys (McNelles & Connolly, 1999). Perhaps attachment anxiety in close relationships in general and the expression of such insecurity and related fears is more accepted and well-responded to in girls' friendships that those of boys. It could be that boys do not feel comfortable expressing such fears in their friendships, thereby precluding any possible collaboration.

Mediation of the relation between anxious attachment with father and ineffective conflict management with friend

The effect of anxious attachment with *father* on later conflict avoidance and stalemate with best friend, found for boys, was mediated by the use of these conflict management strategies with father. However, general attachment did not mediate this relation. Thus, there was no evidence that the process by which attachment anxiety with parents influenced the use of stalemate with friends was a generalization of the attachment anxiety to other relationships, which in turn would have provoked conflict avoidance or stalemate with friend. Rather, it appears the more boys were anxious about the emotional availability of father, the more they avoided conflict, sulked, gave the silent treatment, and bickered with him without objective two years later, and this in turn

increased the likelihood of similar behaviour with their best friends one year later. Attachment with father seems to set the stage for conflict avoidance and stalemate with father, and it is these conflict strategies that are practiced, learned, and then used in other close relationships.

These findings are new. Previous studies examining mediation have failed to find a mediating variable for the relation between attachment and conflict avoidance (Corcoran & Mallinckrodt, 2000; Creasey & Hesson-McInnis, 2001; Creasey, Kershaw, & Boston, 1999), and attachment and stalemate have not been jointly investigated. However, previous research has found support for mediation processes explaining the relation between attachment and negativity/escalation. That is, anger, sadness, and emotional confidence mediated the relation between late adolescents' anxious attachment in close relationships in general and negativity/escalation with romantic partners (Creasey & Hesson-McInnis). Thus, it could be that boys anxious with father experience sadness and anger and low confidence in their ability to express these emotions adequately, and therefore opt for avoiding conflict or expressing their distress indirectly through stalemate with father, and that these behaviours then continue on with friends.

The relations found between anxious attachment to *mother* and both conflict avoidance and stalemate with friend, as specified for gender earlier, were not mediated by either general anxious attachment or conflict management with mother. Thus, the effect of anxious attachment with mother on boys' increased conflict avoidance and stalemate with friends, and on girls' decreased conflict avoidance with friends, must be explained by other factors. Earlier, the possibility that girls with anxious attachment engage in more aggressive or dominant conflict management behaviours was suggested. Thus, it could be

that the process from anxiety with parents to anger and sadness occurs for girls, as described above for boys with fathers, but that girls then respond to these emotions by more forceful expression with parents (therefore decreasing conflict avoidance with time), perhaps even learning these behaviours with parents and then using them friends as well. For boys, attachment anxiety with mother continued to have an effect on these negative conflict behaviours with friends, even when general anxiety and conflict management with mother were included in the models, thus impacting on conflict avoidance and stalemate with friends through other mechanisms. Possible mediating factors could be discomfort with emotional expression within friendships, general emotional dysregulation or, as seen above, lack of confidence in managing emotions. Future studies would further knowledge about the impact of parents on conflict management behaviours by examining these possible meditational processes, for boys and girls separately.

Two separate processes

It is interesting to note that whereas both general attachment and conflict management with parents mediated the relation between attachment with parents and the use of *collaboration* with best friend, only conflict management with father mediated the relation between boys' attachment anxiety with father and *conflict avoidance* and *stalemate* with friend. These results suggest that the impact of parents on the skill of collaborative conflict resolution with friend occurs through two processes: the learning of emotional intimacy and security that is generalized to other relationships, as well as the learning of the *skill* of collaboration within the parental relationship that then becomes practiced and used again with friends. In contrast, the impact of fathers on boys' use of

conflict avoidance and stalemate with friends occurs only through the learning of this set of ineffective and more reactive conflict behaviours within the paternal relationship. Thus, it might be that both the generalization of comfort within intimate relationships to other relationships *and* the practice of collaboration with parents is necessary for the development of the complex cognitive and affective skill of collaboration, whereas in contrast, attachment anxiety with father sets the context for the learning of ineffective conflict behaviours that then become habitual within other relationships for boys.

Strengths, limitations, conclusions, and future research directions

A number of strengths and limitations in this study should be acknowledged. A first limitation of the current study is that it exclusively used self-report data. One concern with this type of data is that participants might bias their results when reporting on their own behaviour. Because adolescents dismissing on the AAI tend to idealize themselves and others, this concern might be particularly important when considering avoidant attachment. However, observational studies of conflict resolution have found that adolescents dismissing on the AAI are observed to have more negative behaviours during conflict with a romantic partner than preoccupied adolescents (Creasey & Ladd, 2004, 2005), and the current study also found avoidant attachment with parents to be associated with negative conflict behaviours with friends. Furthermore, a strength of the current study is that, in order to counter such a bias, analyses were conducted controlling for social desirability. Future research to see if the results of the present study are replicated when attachment and conflict are measured by independent observers would be beneficial.

The current study added to the literature, among other contributions, by examining an understudied conflict style, stalemate, and by finding mediational processes to explain the relation between attachment with parents and conflict behaviours with friends, especially for conflict avoidance, for which no mediators had been previously found. The study found that the more boys and girls were avoidantly attached with parents at age 13, the less collaboration and stalemate they engaged in later with friends. Furthermore, the more boys were anxiously attached to parents, the less they collaborated later with their friends, and the more they avoided conflict and used stalemate with them.

Two questions remain. Although adolescents more avoidantly attached to parents are using less collaboration and stalemate, what behaviours are they in fact using more frequently during conflict with friends? Secondly, although the more girls were anxious with mothers, the less they avoided conflict with friend, what conflict behaviours *are* they engaging in? Previous research has shown a link between both anxious and avoidant attachment and angry discussion, conflict negativity/escalation, and domineering behaviour (Kobak et al., 1993; Creasey & Hesson-McInnis, 2001; Creasey, Kershaw, & Boston, 1999; Creasey & Ladd, 2004; Creasey & Ladd, 2005). Thus, it is possible that adolescents more avoidantly attached to parents, and girls more anxious with their parents, are using a more direct conflict management strategy, such as more aggressive or dominating conflict strategies. Future longitudinal research should also examine these more direct negative conflict management styles.

In the current study, attachment and conflict were only measured from the perspective of the adolescent, when in fact they are dyadic and interactive in nature. Findings of investigations of conflict within marriage indicate that both husbands and

wives contribute to escalation and that reactions to complaints predict marital instability and divorce (Gottman et al., 1998). Another interesting avenue for future research would be to examine the attachment beliefs of close friends and parents, in addition to those of the adolescent, and the *interaction* of these during conflict.

In addition to examining conflict within close friendships for middle adolescents, an understudied relationship, we aimed to strengthen the argument that attachment impacts on conflict resolution by investigating the relation between these variables longitudinally. Indeed, this is one of the strengths of the present study. Unfortunately, data for the mediator and outcome variables were only available at different time points, allowing for analyses to be conducted in one direction only. Further investigation of the directionality of effects, by measuring each construct at all time points and conducting reverse path analyses, would be beneficial.

The current study also improved upon previous studies in that missing data was handled using multiple imputation, rather than listwise or pairwise deletion or mean substitution, which sometimes lead to underestimation of variability or biased parameter estimates. However, a limitation of the study is that the multiple imputed data sets were aggregated prior to data analysis (as opposed to conducting the analyses on all the data sets and then comparing the parameters), leading to biased standard errors. This bias was however taken into account in the interpretation of the results, and methods of assessing effects and mediation that did not involve standard errors were also employed.

The present study contributes to our understanding of how relationships with parents impact on conflict management within close friendships and the process by which this occurs. Findings suggests that collaborative conflict management involves the

generalization of comfort with emotional intimacy and, for boys, the generalization of security in the emotional availability of others, whereas boys' use of more negative conflict behaviours, such as avoiding conflict, sulking and bickering, involves the practice of these behaviours with father. Further investigations breaking down these processes would be beneficial. For example, examining general attachment beliefs and conflict behaviour with parents along with other mediators investigated in other studies, such as confidence in negative mood regulation, social self-efficacy, and perspective taking, could lead to the discovery of interesting pathways.

Table 1: Percentage of missing data, means and standard deviations of study variables

	Percent Missing data	*M*	*SD*
Attachment at Time 1			
Anxious attachment with mother	4.9	2.88	1.06
Avoidant attachment with mother	4.9	2.92	1.27
Anxious attachment with father	10.7	2.89	1.22
Avoidant attachment with father	10.7	3.36	1.31
Proposed mediators			
General anxious attachment at Time 2	20.0	3.04	1.10
General avoidant attachment at Time 2	20.0	2.80	.87
Collaboration with mother at Time 3	18.5	2.20	.59
Collaboration with father at Time 3	20.0	1.97	.72
Conflict avoidance with mother at Time 3	19.0	1.39	.80
Conflict avoidance with father at Time 3	20.5	1.37	.80
Stalemate with mother at Time 3	18.0	1.27	.74
Stalemate with father at Time 3	20.5	1.12	.71
Criterion variables at Time 4/5			
Collaboration with best friend	21.5	2.50	.37
Conflict avoidance with best friend	21.5	1.08	.56
Stalemate with best friend	21.5	.96	.55
Control variables			
Social desirability average (Time 1 to 5)	8.8*	.49	.16

** The average social desirability score was computed after imputing the data for social desirability for each year separately. This is the percent missing for social desirability at Time 1.*

Table 2: Intercorrelations between predictor, mediator, criterion, and control variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Attachment Predictors (Time 1)																
1. Anxious attachment mother		.28**	.77**	.20**	.38**	.12^{t}	-.12^{t}	-.12	.13^{t}	.11	.23**	.13^{t}	-.16*	.06	-.12^{t}	-.14^{t}
2. Avoidant attachment mother			.31**	.39**	.25**	.33**	-.26**	-.12^{t}	.19**	.12^{t}	.15*	.04	-.24**	.03	-.11	-.18*
3. Anxious attachment father				.19**	.39**	.13^{t}	-.08	-.03	.16*	.09	.29**	.11	-.14*	.05	.12	-.12^{t}
4. Avoidant attachment father					.11	.20**	-.11	-.33**	-.05	.14*	.11	.15*	-.14*	.00	.05	-.19**
Mediators 1 (Time 2)																
5. General anxious attachment						.29**	-.05	-.16*	.21**	.20**	.25**	.16*	-.15*	.17*	.22**	-.34**
6. General avoidant attachment							-.12^{t}	-.09	.09	.09	.14*	.04	-.33**	.17*	.11	-.11
Mediators 2 (Time 3)																
7. Collaboration mother								.61**	-.21**	-.06	-.23**	-.13^{t}	.22**	-.10	-.07	.11
8. Collaboration father									.01	-.00	-.17*	-.12^{t}	.17*	-.13^{t}	-.15*	.17*
9. Conflict avoidance mother										.76**	.58**	.50**	-.16*	.33**	.19**	-.39**
10. Conflict avoidance father											.46**	.61**	-.15*	.40**	.28**	-.36**
11. Stalemate mother												.76**	-.20**	.21**	.35**	-.46**
12. Stalemate father													-.07	.30**	.43**	-.37**
Criterion variables (Time 4/5)																
13. Collaboration friend														-.27**	-.20**	.27**
14. Conflict avoidance friend															.59**	-.30**
15. Stalemate friend																-.33**
Control variables																
16. Social Desirability T1-5																

^{t} $p < .10$, * $p < .05$, ** $p < .01$

Figure 1a: Proposed Mediational Model 1

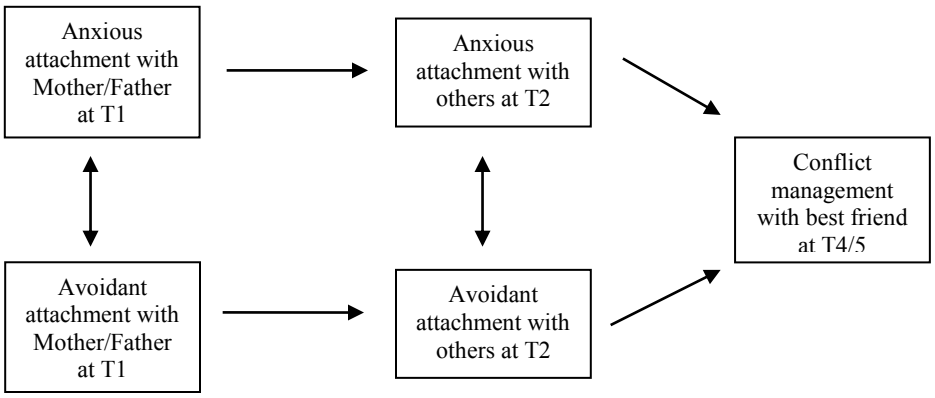


Figure 1b: Proposed Mediational Model 2

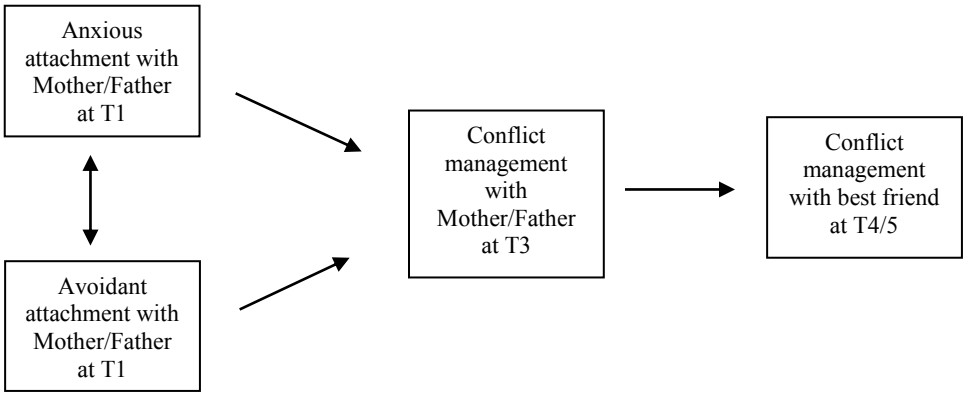
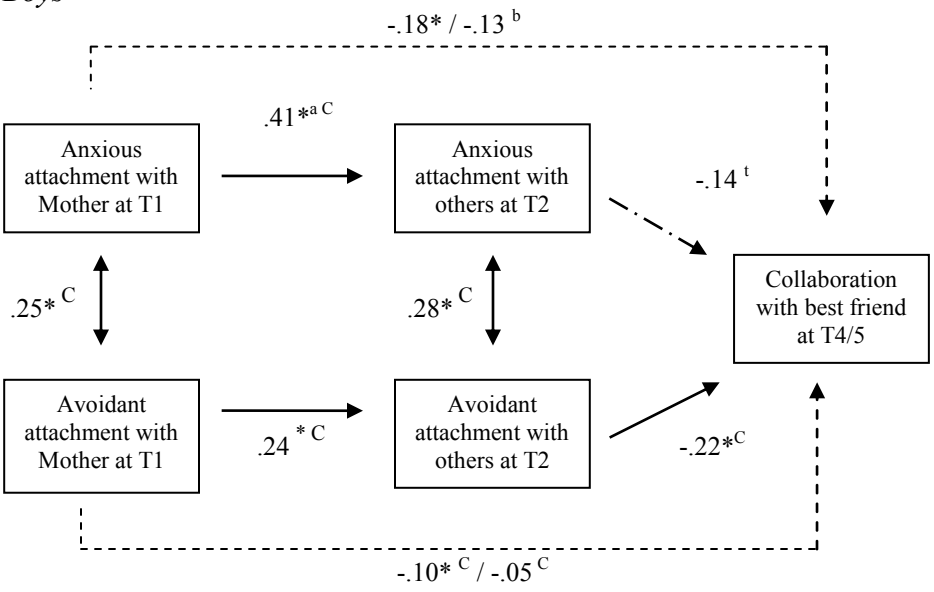
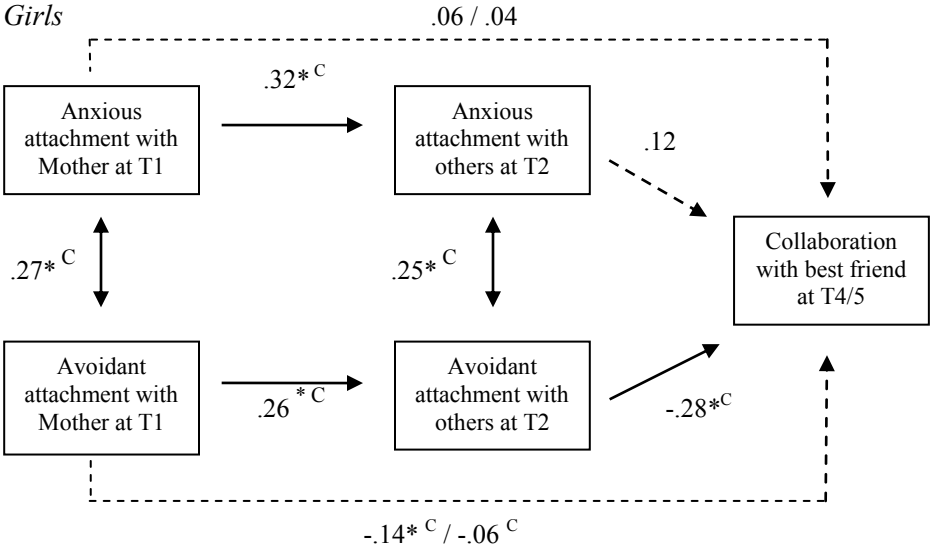


Figure 2: Attachment with others mediates the relation between attachment with mother and collaboration with best friend

Boys



Girls



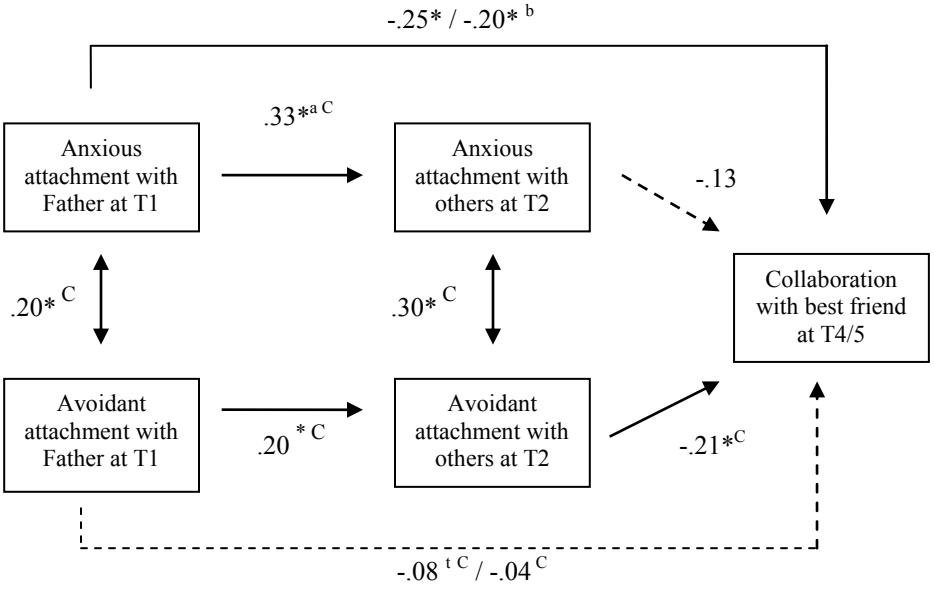
χ^2 (df) = 8.04(10), p = .63, CFI = 1.00, RMSEA = .00.

Model not significantly different than model without direct paths ($\Delta \chi^2$ (Δdf) = 2.44 (3), p = .49).
For both boys and girls: Sobel test statistic for avoidant attachment with mother to collaboration with friend = -2.38 (p <.05, 2-tailed). For boys only: Sobel test statistic for anxious attachment with mother to collaboration with friend = -1.61 (p = .10, 2-tailed)

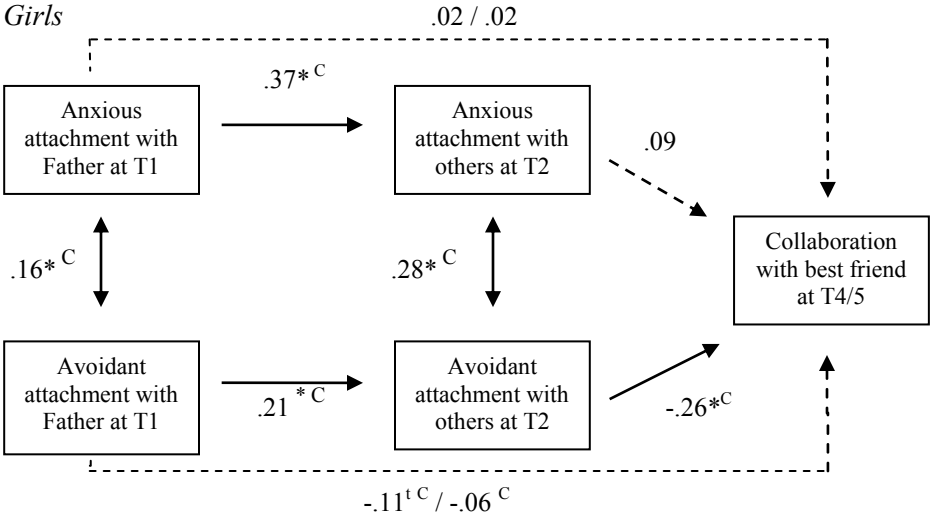
[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized, which were tested with 2-tailed tests. [b] For the direct paths from attachment with mother to collaboration with friend, the first standardized path coefficient is from the direct model and the standardized path coefficient after the slash is from the present model. [C] Path constrained to be equal for boys and girls. * $p < .05$, [t] $p < .10$

Figure 3: Avoidant attachment with others mediates the relation between avoidant attachment with father and collaboration with best friend

Boys



Girls



χ^2 (df) = 4.46(10), p = .92, CFI = 1.00, RMSEA = .00. (Satorra-Bentler Scaled χ^2 (df) = 3. 69(10), p = .96, CFI = 1.00, RMSEA = .00). Model not significantly different than model without direct paths (Δ χ2 (Δdf) = 4.63(3), p = .20, 1-tailed; Satorra-Bentler Δ χ2 (Δdf) = 3.81(3), p = .28, 1-tailed).

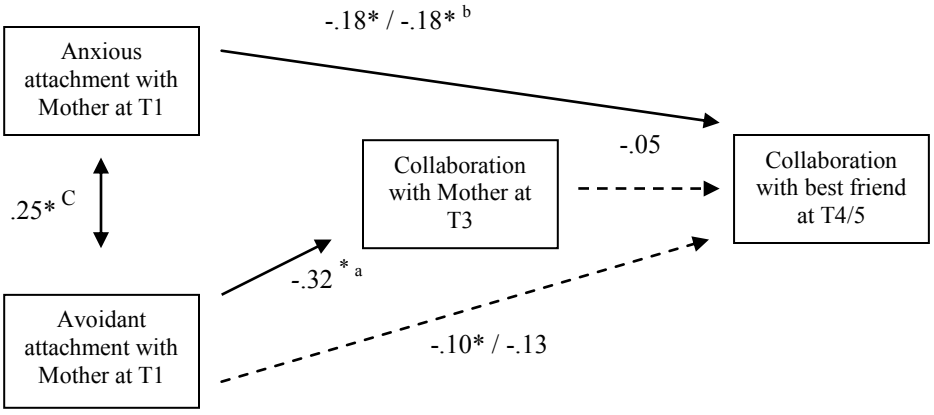
For boys: Sobel test statistic for avoidant attachment with father to collaboration with friend = -2.28 (p <.05, 2-tailed).

For girls: Sobel test statistic for avoidant attachment with father to collaboration with friend = -2.05 (p <.05, 2-tailed, using Robust standard errors).

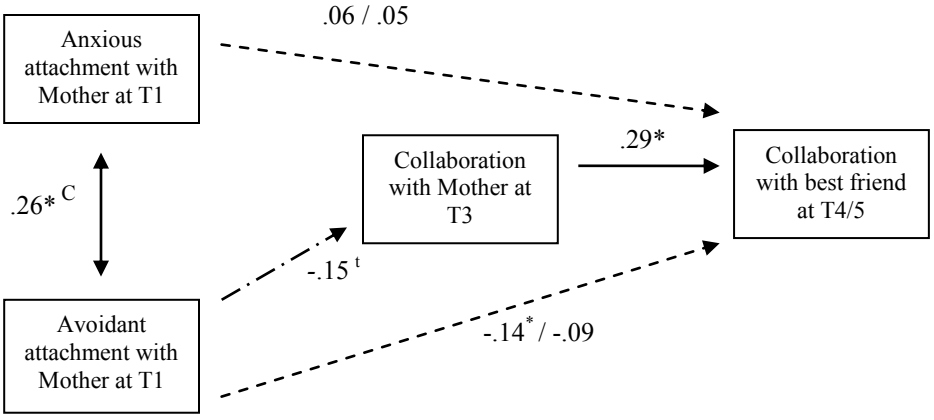
[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths. The significance tests for all paths are 1-tailed. [b] For the direct paths from attachment with father to collaboration with friend, the first standardized path coefficient is from the direct model and the standardized path coefficient after the slash is from the present model. [C] Path constrained to be equal for boys and girls. * p < .05, [t]p < .10 (1-tailed),

Figure 4: Collaboration with mother tends to mediate the relation between avoidant attachment with mother and collaboration with best friend for girls only

Boys



Girls



χ^2 (df) = 1.11 (3), p = .78, CFI = 1.00, RMSEA = .00.

Model not significantly different than model without direct paths ($\Delta \chi^2$ (Δdf) = 6.02 (4), p = .20, 1-tailed).

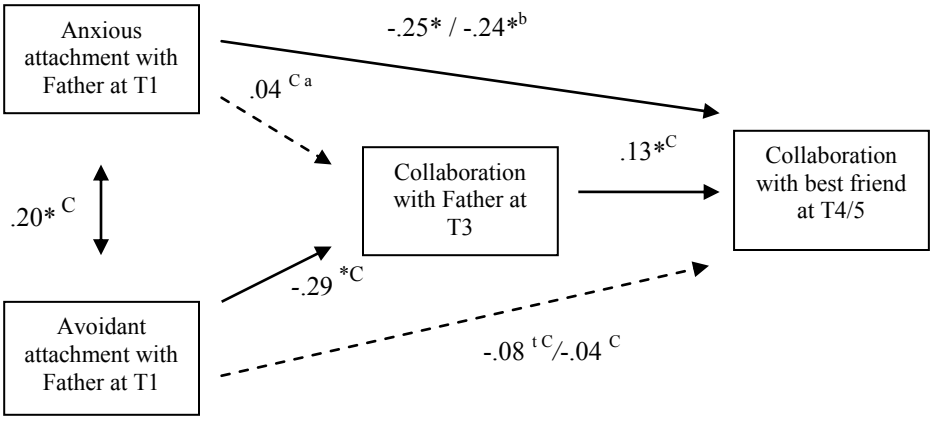
For girls only: Sobel test statistic for avoidant attachment with mother to collaboration with friend = -1.51 (p = .07, 1-tailed).

[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. *Paths nonsignificant for both genders were taken out of the model.* The significance tests for all paths are 1-tailed. [b] For the direct paths from attachment with mother to collaboration with friend, the first standardized path coefficient is from the direct model and the standardized path coefficient after the slash is from the present model. [C] Path constrained to be equal for boys and girls.

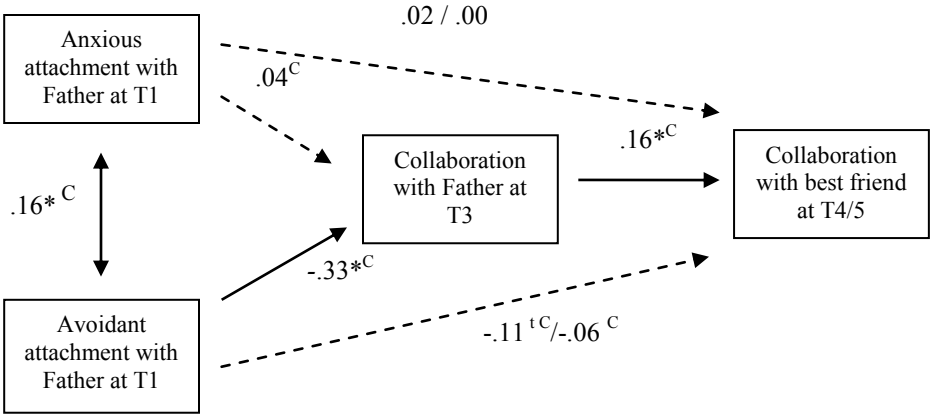
* $p < .05$, [t] $p < .05$

Figure 5: Collaboration with father mediates the trend between avoidant attachment with father and collaboration with best friend for both genders

Boys



Girls



χ^2 (df) = 2.90 (5), p = .72, CFI = 1.00, RMSEA = .00.

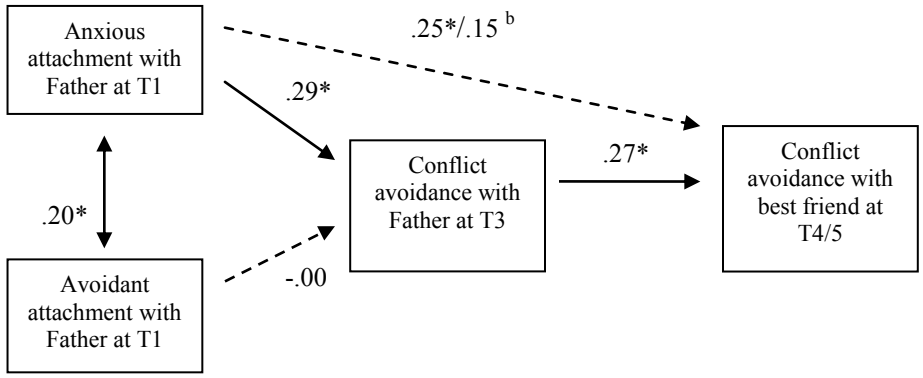
Model not significantly different than model without the direct path between avoidant attachment with father and collaboration with best friend ($\Delta \chi^2$ (Δdf) = .46 (1), p = .49, 1-tailed).

For both boys and girls: Sobel test statistic for avoidant attachment with father to collaboration with friend = -2.05 ($p < .05$, 2-tailed).

[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths. The significance tests for all paths are 1-tailed. [b] For the direct paths from attachment with father to collaboration with friend, the first standardized path coefficient is from the direct model and the standardized path coefficient after the slash is from the present model. [C] Path constrained to be equal for boys and girls.

* $p < .05$, [t] $p < .10$,

Figure 6: <u>For boys only</u>: Conflict avoidance with father mediates the relation between anxious attachment with father and conflict avoidance with best friend



χ^2 (df) = .68 (1), p = .41, CFI = 1.00, RMSEA = .00

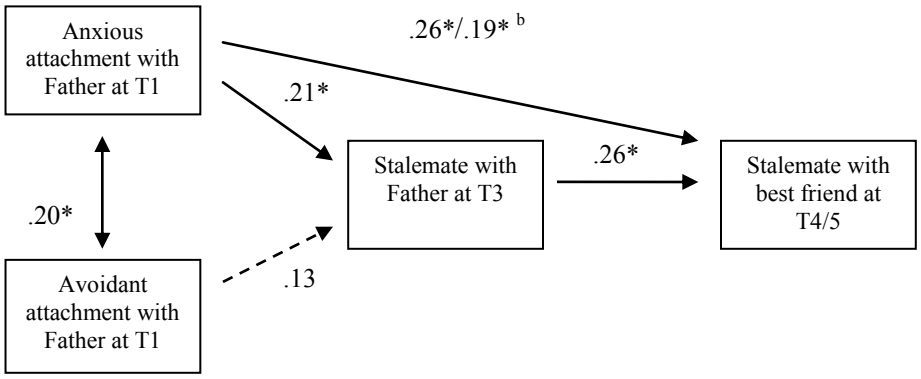
Model was not significantly different than model without direct path ($\Delta \chi^2$ (Δdf) = 2.33 (1), p = .13, 1-tailed).

Sobel test statistic for anxious attachment with father to conflict avoidance with best friend = 1.92 ($p < .05$, 1-tailed).

[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths,. *Note that the path from avoidant attachment with father to conflict avoidance with best friend was omitted from the model because it was nonsignificant.* The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance), which were tested with 2-tailed tests. [b] For the direct paths from attachment with father to conflict avoidance with friend, the first standardized path coefficient is from the direct model and the standardized path coefficient after the slash is from the present model.

* $p < .05$

Figure 7: <u>For boys only</u>: Stalemate with father partially mediates the relation between anxious attachment with father and stalemate with best friend



χ^2 (df) = .15 (1), p = .70, CFI = 1.00, RMSEA = .00

Model tended to be better than model without direct paths ($\Delta \chi^2$ (Δdf) = 3.86 (1), p = .05, 1-tailed).

Sobel test statistic for anxious attachment with father to stalemate with friend = 1.69 (p < .05, 1-tailed).

[a] All path coefficients are standardized, solid lines represent significant paths,. *Note that the path from avoidant attachment with father to stalemate with best friend was omitted from the model because it was nonsignificant.* The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., avoidant attachment to stalemate), which were tested with 2-tailed tests. [b] For the direct paths from attachment with father to stalemate with friend, the first standardized path coefficient is from the direct model and the standardized path coefficient after the slash is from the present model.

* p < .05,

General Discussion

The main purpose of this chapter is to discuss and compare results from Study 1 and 2 and provide overall interpretation and conclusions. Study 1 examined the relation between attachment to parents and conflict management with them over two years, from age 15 to 17 (on average). In Study 2, the relation between attachment to parents at age 13 and conflict management with friends three years later was investigated. In addition, Study 2 examined whether general attachment and conflict management with parents mediated the relation between attachment to parents and conflict management with friends. The investigation of the latter mediator is dependent on the assumption that attachment and conflict management with parents are associated. Thus, Study 1 is also complementary to Study 2 in that it examined in more detail one of the conditions for mediation investigated more briefly in Study 2.

Study 1 and 2 results for the prediction of conflict management with parents from attachment will first be compared. Then, results will be compared with respect to the differential predictions from attachment to parents to conflict management with parents *versus* best friend. Possible explanations for the results and future research directions will also be discussed.

Comparison of Study 1 and 2: the relation between attachment and conflict management with parents

Results from Study 1 and 2 pertaining to the relation between attachment and conflict management with parents are compared below. It is important to note that this comparison involves two different (approximate) age ranges within the same sample. That is, whereas Study 2 examined attachment with parents at age 13 and conflict

management with parents at age 15, Study 1 examined adolescents' attachment and conflict management with parents at ages 15 and 17. A second consideration is that the path coefficients between the attachment and conflict management variables in the two studies, albeit involving the same variables, represent slightly different phenomena. That is, in Study 1, the path coefficients represent the strength of the association between the two variables, taking into account the concurrent relationships between the same two variables, thereby measuring the prediction of change in conflict management with parents over time from earlier attachment. However, in Study 2, the path coefficients represent the strength of the associations without controlling for the concurrent associations, thus measuring associations across time rather than change, but controlling for the relations between the other variables in the model (e.g., conflict management with parents predicting conflict management with best friend).

Predictions from avoidant attachment. Consistent results across the two studies were found with respect to collaboration with mother. That is, both when predicting from age 13 to 15, and from attachment at age 15 to change in conflict management from age 15 to 17, the more adolescents avoided closeness with mother, the less they collaborated with her. Interestingly, the negative relation between avoidant attachment at age 15 and collaboration with father at age 17 found for girls only in Study 1, was found for the whole sample in Study 2. Thus, whereas avoiding closeness with father is negatively associated with later collaboration with him for boys and girls in early adolescence, and these variables continue to be correlated concurrently both at age 15 and 17 for the whole sample (see Study 1, *Table 2*), avoidant attachment predicts a decrease in collaboration with father over time *for girls only* in middle adolescence.

Also noteworthy is the finding that the association across time between attachment avoidance and conflict avoidance with parents might have become stronger. That is, in Study 2, avoidant attachment with mother at age 13 tended to predict 1% of the variance in conflict avoidance with mother at age 15, without controlling for conflict avoidance at age 13 (this relation was not found for father). However, in Study 1, avoidant attachment with each parent predicted an increase in conflict avoidance with that parent from age 15 to 17, accounting for 7-8% of the variance for mother and 2-3% for father, a larger amount of variance even though the concurrent relation between the two variables was controlled.

The question remains, what happens in middle adolescence to make avoidant attachment impact more on conflict avoidance with both parents, and for girls, on collaboration with father? It could be that early adolescence brings a number of new autonomy-related conflicts with parents, through which adolescents who avoid emotional closeness with parents learn whether to support or change their beliefs about their parents' being unresponsive. Thus at the beginning of adolescence, perhaps avoidantly attached adolescents are testing the waters with their parents because all adolescents are having inevitable conflicts associated with the new experiences they are faced with on a daily basis. With time, however, beliefs about parents might become more entrenched, and avoidantly attached adolescents might opt simply to avoid the conflicts, having confirmed that discussing the disagreement is futile. With respect to collaboration with fathers, perhaps avoidantly attached girls try longer before giving up on collaborating with father, whereas avoidance impacts on boys' collaboration with father earlier on, preventing the development of the skill within the relationship with father.

Predictions from anxious attachment. Findings with respect to anxious attachment and collaboration differed depending on the age of the adolescents. Firstly, within the relationship with mother, there appeared to be a developmental trend: the relation between anxiety and collaboration changed from positive to negative with age. That is, in Study 2, although attachment anxiety at age 13 did not predict collaboration at age 15 within the structural equation models, correlations indicated that the more adolescents were anxious with mother at age 13, the *more* they tended to collaborate with her at age 15. In Study 1, concurrent correlations between anxious attachment and collaboration with mother indicated a positive trend at age 15 as well. However, anxious attachment at age 15 predicted a decrease in collaboration with mother over time. Thus, in early adolescence, some anxious adolescents might begin to attempt to resolve disagreements constructively with their mothers, but over time, their beliefs about or actual experience of unresponsiveness of their mothers to their concerns might take precedence, and decrease their use of collaboration with their mothers as they approach 17 years of age.

Within the relationship with father, similarly no relation was found between attachment anxiety at age 13 and collaboration at age 15, however by later adolescence (age 17), the concurrent correlation similarly clearly indicates a negative relation between the two variables (r = -.20, p < .05). Despite this, girls more anxious with father at age 15 increasingly collaborated with him over time, opposite to what we had predicted. As explained earlier, it might be that anxious girls are learning to collaborate within their friendships, or as described above, in earlier adolescence with their mothers, and then begin to apply these skills with their fathers, as they contemplate approaching adulthood, upcoming transitions and possible separations from father (i.e., moving out, going to

college or university). This might be especially salient for girls, who have been found to perceive their fathers as less available as they enter adolescence (Lieberman, Doyle, & Markiewicz, 1999).

Findings with respect to anxious attachment and stalemate suggest that the association between these variables likely develops in early adolescence. Indeed, Study 2 findings indicated that the more adolescents were anxiously attached with mother at age 13, the more they used stalemate with her two years later. The same result was found for boys with fathers. Study 1 concurrent correlations found that the positive relation between attachment anxiety and stalemate with mother continues both at age 15 and 16/17, but that anxiety was not associated with a change in stalemate with parents from age 15 to 17. Thus, anxious attachment likely engenders stalemate-like behaviours in early adolescence or perhaps earlier in childhood, and thereafter, these behaviours become habitually used, but do not increase in frequency.

It is noteworthy that both Study 1 and 2 were conducted with the same sample. Thus, comparisons are longitudinal in nature, rather than cross-sectional, thereby avoiding possible cohort-related biases in the differences found. In order to properly test the developmental hypotheses posited in this section, albeit that they are based on certain trends in the existing data, conflict management with parents would need to be measured earlier in adolescence as well. That is, proper comparisons would include conflict management measurement at age 13 and 14 as well, in order to see full developmental trends, especially given the meta-analytic finding that conflict is most frequent in early adolescence (Laursen, Coy, & Collins, 1998). In addition, given some of the suggestions

above (e.g., that some of the relations are formed prior to adolescence), similar studies in middle childhood would also be beneficial.

Comparison of Study 1 and 2: findings for conflict management with parents vs. best friend

Predictions from avoidant attachment. Predictions from avoidant attachment with parents to collaboration with mother, father, and best friend were generally in the same direction, with a few specifications. In general, attachment avoidance with parents was negatively associated with collaboration both with parents and friends. In addition, Study 2 findings indicated that collaboration with father fully mediated the trend between avoidant attachment with father and collaboration with friend, and collaboration with mother tended to mediate similarly for girls.

With respect to conflict avoidance, although attachment avoidance with parents predicted an increase in conflict avoidance with parents over time from age 15 to 17, no relation was found between attachment avoidance with parents and conflict avoidance with friend, contrary to prediction. Instead, it was attachment avoidance *in relationships in general* that positively predicted later conflict avoidance with friend. Given that attachment avoidance with others in general and with parents were correlated, it could be that general avoidance mediates the relation between attachment avoidance with parents and conflict avoidance with friend earlier in earlier adolescence or late childhood, and that by middle adolescence, only the link between general attachment avoidance and conflict avoidance with friend remains.

Predicting from anxious attachment. In general, with the exception of the finding that anxious girls increased in collaboration with father over two years (see discussion

above), Study 1 and 2 results mostly found a negative relation between anxious attachment with parents and collaboration with close others. However, of note, with respect to conflict management with close friend, these relationships were only true for boys. Although the more adolescents were anxiously attached with mother at age 15, the less they collaborated with her over time, attachment anxiety with parents at age 13 negatively predicted collaboration with friends three years later for boys only. As discussed in Study 2 and above, it could be that anxious girls are learning to collaborate within their friendships and do not depend on their relationship with parents as much as boys do to learn such skills.

Study 1 and 2 findings with respect to anxious attachment and stalemate were not consistent, although this could be due to the statistical differences noted in the previous section. That is, although anxious attachment with parents did not predict an increase in stalemate with them from age 15 to 17, anxious attachment and stalemate were correlated concurrently within the relationship with mother at age 15 and 17, and tended to be correlated with father at age 17. Furthermore, anxious attachment at age 13 was positively associated with stalemate with mother at age 15 (in Study 2), and for father at age 15 for boys only. Thus, as explained earlier, anxious attachment with parents likely impacts on the use of stalemate with parents earlier in adolescence or middle childhood, and thereafter the association remains, but might not cause further increases in stalemate in middle adolescence. Furthermore, for boys, attachment anxiety with parents at age 13 positively predicted stalemate with friend at age 16/17. In the case of anxiety with father, the relation was partially explained by the use of stalemate with father. Thus, although early anxious attachment no longer impacts on stalemate with parents in middle

adolescence, the impact of anxious attachment with father on stalemate with friends in later adolescence is still felt through the learning of stalemate behaviours with father for boys.

Gender-specific findings

The most striking gender-related finding of the current dissertation is that the association between anxious attachment with mother and father and conflict management with best friend was largely found for boys only. The findings of Study 2 underscore that anxious attachment at age 13 impacts on boys' later conflict management behaviours and abilities within other relationships much more than for girls. Furthermore, in both Study 1 and 2, the relation between anxious attachment and conflict management was at times found to be in the opposite direction than expected for girls. That is, the more girls were anxious with father at age 15, the *more* they collaborated with him two years later. Similarly, the more girls were anxious with mother at age 13, the less they tended to avoid conflict with best friend three years later. In contrast, for boys, the association between anxiety and conflict management was generally in the expected direction: anxious attachment was negatively related to collaboration with best friend or with mother, and positively associated with conflict avoidance or stalemate with friend.

These results suggest that anxious girls might be more flexible in their use of various conflict management styles than boys, perhaps learning more about conflict management from their friendships, and might therefore choose different approaches depending on the situation. Previous research has shown that girls are more likely than boys to use discussion and self-disclosure, rather than to engage in a common activity to establish intimacy in their friendships (McNelles & Connolly, 1999). Such discussion and

self-disclosure would promote more comfort with emotional expression in girls' friendships, and might set the stage for discussing disagreements when they do occur, and perhaps in some cases, for collaborating and finding common solutions. Thus, boys might be more dependent on the relationships with parents to learn ways to discuss and resolve conflict.

Within friendships, it might be less possible to avoid conflict for girls than boys, given the discussion-based intimacy inherent in girls' friendships. Girls more anxiously attached with parents were not found to engage in less collaboration with friends, as was found for boys. Thus, it could be that girls more anxious with their parents are discussing disagreements with their friends, perhaps in an emotionally expressive or even dominating fashion, or perhaps even by attempting to collaborate.

Why are attachment and conflict management related? Considerations for future research

Study 2 investigated the process by which attachment with parents might impact on conflict management with friends. Indeed, results indicated that both general attachment and conflict management with parents mediated the relation between attachment with parents and the use of collaboration with best friend. In addition, only conflict management with father, but not general attachment, mediated the relation between boys' anxious attachment with father and conflict avoidance or stalemate with best friend. It was concluded that both the generalization of comfort with emotional intimacy with parents to other relationships and the practice of collaboration with parents aid in the development of collaboration skills within close relationships, whereas attachment anxiety with father might set the context for the learning of ineffective

conflict behaviours by boys that then become habitual within their other close relationships. Thus, two processes were identified to explain the relation between attachment with parents and conflict management with friends.

The question remains, why might attachment with parents and conflict management *with parents* be associated? Or why might attachment with others in general be associated with conflict management with close others? These associations were hypothesized to be due to two explanations given in attachment theory (see Study 1 for more details). The first explanation was that attachment style represents internal working models of self and other that impact on behaviour during conflict. That is, views of the self as valued and worthy and views of parents/others as available or trustworthy likely impact on expectations and interpretations during conflict with parents/others, which in turn would impact on conflict motivations and therefore the choosing of one conflict management strategy over another. The second explanation consists of the emotion regulation hypothesis. That is, adolescents anxiously or avoidantly attached are thought not to have learned adequate emotion regulation skills, and it is this ineffective emotion regulation that might lead to ineffective conflict management.

These hypothesized processes have not been explicitly tested. However, previous research has found that a number of related variables mediate the relation between attachment security in general and conflict management with romantic partners. That is, one's confidence in one's behaviour or social skills during conflict was found to mediate. Specifically, Corcoran and Mallinckrodt (2000) found that adults' view of their own social self-efficacy mediated the negative relation between preoccupation and discomfort with closeness in relationships in general and constructive conflict resolution with a

romantic partner (i.e., compromising and integrating). Similarly, Creasey and Hesson-McInnis (2001) found that confidence in regulating one's behaviour during conflict partially mediated the negative relation between adolescents' anxious and avoidant attachment in relationships in general and positive behaviour during conflict with their romantic partner. Thus, previous research supports the idea that positive views of the self partly explain the relation between attachment and conflict management.

In addition, consistent with the emotion regulation hypothesis, experiencing fear partially mediated the negative relation between adolescents' general anxious attachment and positive behaviours during conflict with romantic partner (Creasey & Hesson-McInnis, 2001). Furthermore, the same authors found that the relations between adolescents' anxious and avoidant attachment in relationships in general and negativity/escalation with romantic partner were partially mediated by anger, sadness, and confidence in one's ability to regulate emotion. Corcoran and Mallinckrodt (2000) also found that perspective taking mediated the relation between adults' discomfort with closeness in relationships in general and integrating behaviours during conflict with a romantic partner. Thus, it seems that attachment security might impact on conflict management not only due to learning emotion regulation, but also through learning to take others' perspectives.

The above studies investigated mediational processes explaining the relation between attachment *in relationships in general* and conflict *with romantic partner*, in adolescents and adults. As explained earlier, studies are needed to examine mediational models explaining the relation between attachment *with parents* and conflict management *with parents*, or between attachment with close others *in general* and conflict

management *with peers or close friends*. Such research could investigate a number of mediators. Potential mediators, taken from past research, could be separated conceptually into four categories: abilities, beliefs about relationships, beliefs about the self, and beliefs about others.

Figure GD1 shows a theoretical model that includes these potential mediators. Among the abilities are the ability to regulate negative emotion, to provide affection or use humour, to accept influence from the conflict partner, and to inhibit the expression of criticism or contempt (as seen in the research of Gottman, Coan, Carrere, and Swanson (1998), where soothing through touch, verbal affection or humour by husbands and wives and accepting influence from one's wife was negatively associated with divorce and where contempt predicted divorce). Another ability-related potential mediator would be the ability to *accurately* interpret others' emotions, behaviours, thoughts, and intentions, a wide-ranging type of perspective taking that would necessitate coding by observers and measurement of the others' experienced emotions and thoughts. With respect to beliefs about relationships, attachment security might lead adolescents to believe that disagreement is normal in relationships, which in turn might lead to more constructive conflict management. Beliefs about the self as potential mediators might be beliefs that one's concerns are valid or, as found in the research described above, confidence in one's ability to behave effectively during conflict. Lastly, mediating beliefs about others likely involve beliefs that others will respond supportively to differences of opinion or negative emotions. Of note, these mediators likely impact on each other (these bidirectional relations are not shown on the figure for the sake of clarity). For example, the various abilities that would impact on conflict management listed above likely impact on one's

confidence in one's ability to behave effectively during conflict, and vice versa. In order to fully understand why attachment with parents and conflict management are associated, and in order to give justice to the complexity of attachment theory and the many processes proposed, future research should investigate and compare these potential mediators, examining them within the relationship with parents, as well as for the association between attachment to others in general and conflict management with close others.

Lastly, although the ability to regulate negative emotions seems to be an important mediator of the relation between attachment and conflict management, the type of negative emotion experienced likely impacts on the type of conflict behaviour used. This is particularly important in the case of anxious attachment, given the inconsistent findings with respect to conflict management discussed previously. It could be that anxious adolescents use different conflict strategies, depending on what emotions are most likely in the given context or relationship. Anxious attachment has been associated with higher fear, anger, and sadness during conflict (Creasey & Hesson-McInnis, 2001). It could be that experiencing fear, and not being able to cope effectively with this emotion, leads to more avoidance of conflict. In contrast, experiencing anger might increase the likelihood of stalemate or more confrontational conflict behaviours, and decrease the likelihood of collaboration.

Given that findings opposite to the hypotheses for anxious attachment were mostly found for girls, it could be that anxiously attached girls might experience more fear during conflict, whereas anxious boys might experience more anger, a hypothesis that could be tested in future research. In situations where no relation was found between

anxious attachment and conflict management (e.g., girls' anxiety with parents and stalemate with friends), it could be that part of the sample experiences more fear during conflict and the other part experiences more anger, thus differentially impacting on their choice of conflict behaviours.

In the quest to clarify the differential impacts of anxious *vs.* avoidant attachment on later social behavior, examining the process by which attachment anxiety impacts on different conflict behaviors is paramount. Thus, it would be valuable to test the anger *versus* fear hypothesis posited above by using a mediational model, as shown in *Figure GD2*. Ultimately, such mediational models will further attachment research in a very important way, taking it from predictions of behaviour in relationships to explaining processes underlying the predictions, and thus allow for more proximal targets for clinical intervention for relationship difficulties.

Figure GD1: Theoretical model of potential mediators of the link between attachment and conflict management

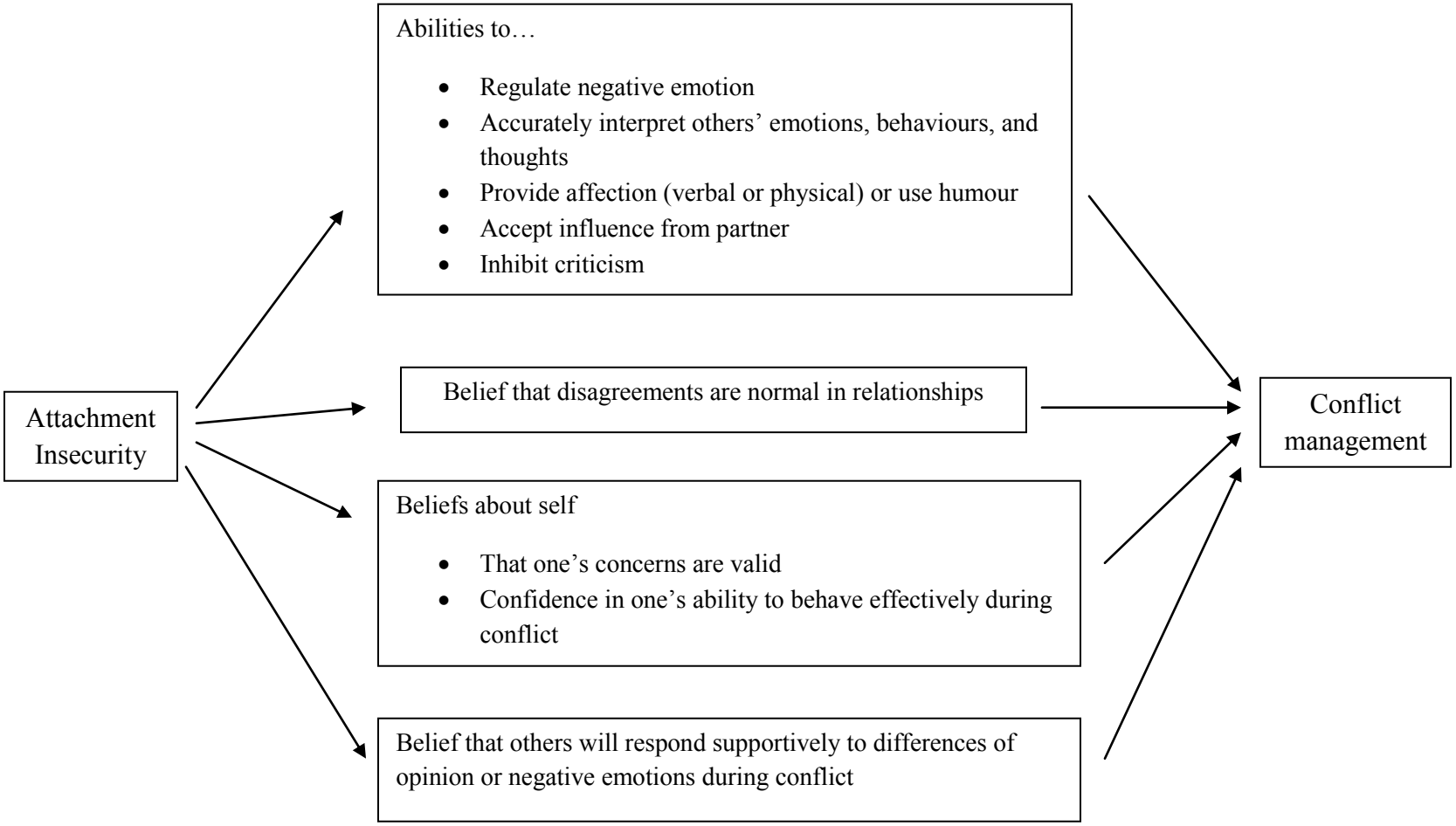
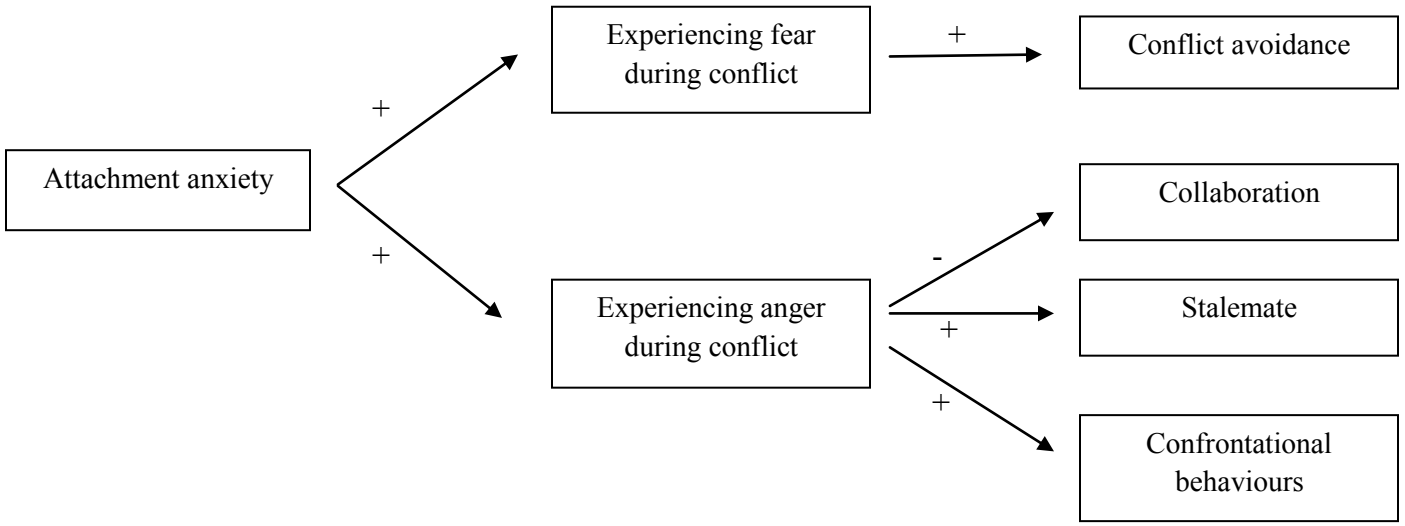


Figure GD2: Theoretical mediational model for attachment anxiety



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Appendix A

Study 1 additional preliminary analyses and results

Appendix A1: Additional preliminary analyses

Table A1: Partial correlations between attachment and conflict management variables, controlling for social desirability (mean of Time 1&2)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Time 1														
1. Anxiety with mother		.04	.67**	.14*	.16*	.08	.12	.02	.13^{t}	.04	.64**	.03	.47**	.17*
2. Avoidance with mother			-.02	.30**	-.31**	.21**	.12^{t}	-.14*	.09	.06	-.03	.65**	-.15*	.08
3. Anxiety with father				.06	.04	.13^{t}	.30**	-.06	.09	.09	.42**	.01	.63**	.10
4. Avoidance with father					-.19**	.07	.16*	-.50**	.22**	.28**	.22**	.38**	.09	.62**
5. Collaboration with mother						-.18*	-.21**	.61**	-.03	-.09	.15*	-.31**	.11	-.05
6. Conflict avoidance mother							.49**	.06	.73**	.42**	.01	.11	.04	-.01
7. Stalemate with mother								-.13^{t}	.37**	.72**	.14^{t}	.11	.30**	.18*
8. Collaboration with father									.04	-.08	.03	-.25**	-.03	-.33**
9. Conflict avoidance father										.57**	.06	.11	.04	.26**
10. Stalemate with father											.09	.12^{t}	.10	.26**
Time 2														
11. Anxiety with mother												.14^{t}	.71**	.30**
12. Avoidance with mother													.03	.37**
13. Anxiety with father														.31**
14. Avoidance with father														
15. Collaboration with mother														
16. Conflict avoidance mother														
17. Stalemate with mother														
18. Collaboration with father														
19. Conflict avoidance father														
20. Stalemate with father														

^{t} $p < .10$, * $p < .05$, ** $p < .01$

Table A1 continued

	15	16	17	18	19	20
Time 1						
1. Anxiety with mother	-.13 ^{t}	.01	.04	-.16*	.05	.05
2. Avoidance with mother	-.38**	.33**	.04	-.05	-.03	-.22**
3. Anxiety with father	-.14 ^{t}	.02	.05	-.01	.00	.02
4. Avoidance with father	-.08	.16*	.23**	-.30**	.23**	.23**
5. Collaboration with mother	.23**	-.22**	-.06	-.04	-.01	.09
6. Conflict avoidance mother	-.32**	.43**	.32**	-.09	.23**	.18*
7. Stalemate with mother	-.29**	.23**	.38**	-.06	.14 ^{t}	.31**
8. Collaboration with father	.11	-.13 ^{t}	-.04	.27**	-.11	-.06
9. Conflict avoidance father	-.28**	.37**	.35**	-.24**	.42**	.33**
10. Stalemate with father	-.14 ^{t}	.30**	.43**	-.05	.42**	.52**
Time 2						
11. Anxiety with mother	-.10	.04	.15*	-.19**	.08	.12 ^{t}
12. Avoidance with mother	-.51**	.36**	.07	-.13 ^{t}	.16*	-.06
13. Anxiety with father	-.18*	-.10	.07	-.18*	-.06	.05
14. Avoidance with father	-.21**	.03	.06	-.59**	.28**	.24**
15. Collaboration with mother		-.28**	-.11	.40**	-.03	.07
16. Conflict avoidance mother			.61**	-.00	.55**	.29**
17. Stalemate with mother				-.02	.41**	.65**
18. Collaboration with father					-.05	-.02
19. Conflict avoidance father						.73**
20. Stalemate with father						

^{t} $p < .10$, * $p < .05$, ** $p < .01$

Additional statistics regarding MANCOVA for conflict management style

With respect to the MANCOVA for conflict management style with mother and father, the univariate effects indicated that conflict avoidance with mother, stalemate with mother, and stalemate with father increased for girls over time: ($M_{conflict\ avoidance\ mother}$ = 1.39, SD = .88 to $M_{conflict\ avoidance\ mother}$ = 1.47, SD = .87; $M_{stalemate\ mother}$ = 1.34, SD = .80 to $M_{stalemate\ mother}$ = 1.50, SD = .80; $M_{stalemate\ father}$ = 1.23, SD = .76 to $M_{stalemate\ father}$ = 1.30, SD = .84), but decreased for boys ($M_{conflict\ avoidance\ mother}$ = 1.39, SD = .72 to $M_{conflict\ avoidance\ mother}$ = 1.19, SD = .64; $M_{stalemate\ mother}$ = 1.19, SD = .68 to $M_{stalemate\ mother}$ = .95, SD = .65; $M_{stalemate\ father}$ = 1.01, SD = .64 to $M_{stalemate\ father}$ = .83, SD = .67).

Appendix A2: Results, in order of analyses

Main Analyses

For all models, Mardia's coefficient of multivariate kurtosis was high, for both boys and girls, with the normalized estimates ranging from 2.86 to 6.68. Normalized estimates are considered high when above 3 (Mardia, 1974, as cited in Byrne, 2006). Thus, robust statistics were used for all analyses.

Collaboration

Mother. The hypothesized two-group model predicting collaboration with mother at age 17 from attachment with mother at age 15 fit the data well (Satorra-Bentler scaled χ^2 (df) = 22.61 (20), p = .31, CFI = .99, RMSEA = .04, see *Figure 2*). There were no significant differences between boys and girls, with all constraints having non-significant chi-squares for the Lagrange multiplier test. For both boys and girls, when controlling for the correlations between attachment and collaboration within the same time point, both attachment variables were negatively associated with collaboration with mother two years later. Attachment avoidance significantly negatively predicted 16% of the variance in collaboration for girls (standardized path coefficient = -.40, $p < .05$), double the amount of variance predicted for boys (standardized path coefficient = -.29, $p < .05$). Attachment anxiety negatively predicted collaboration, equally for both genders (standardized path coefficient = -.13, $p < .05$). Thus the first two hypotheses (i.e., that both attachment anxiety and avoidance would predict a decrease in collaboration), were supported within the relationship with mother, for both adolescent genders.

The reverse model was then tested to examine whether collaboration with mother at age 15 predicted attachment with mother at age 17. The two-group reverse model fit the data poorly (Satorra-Bentler scaled χ^2 (df) = 42.50 (20), p = .00, CFI = .90, RMSEA = .11). Collaboration with mother did not predict later anxiety about abandonment, but negatively predicted later avoidance of closeness with her (standardized path coefficients = -.16, $p < .05$).

The third model, the bidirectional model fit the data well (Satorra-Bentler scaled χ^2 (df) = 18.73 (18), p = .41, CFI = 1.00, RMSEA = .02, *Figure 3*), better than the hypothesized model (i.e., without the reverse paths), but this difference was not significant ($\Delta \chi^2$ (Δdf) = 3.88 (2), $p = .14$, 1-tailed). The bidirectional model fit the data significantly better than the reverse model, however ($\Delta \chi^2$ (Δdf) = 23.77 (2), $p < .001$, 1-tailed). Whereas anxiety negatively predicted later collaboration and the reverse was not true, avoidance and collaboration with mother appear to have a bidirectional relationship over time.

Father. With respect to the relationship with father, the hypothesized two-group model predicting collaboration at age 17 from attachment at age 15 fit the data well (Satorra-Bentler scaled χ^2 (df) = 19.57 (17), $p = .30$, CFI = .99, RMSEA = .04*)*. In contrast to the similar findings for both genders with mother, within the relationship with father, anxiety and avoidance were found to be associated with later collaboration for girls only. Thus, there was a significant difference in the prediction of collaboration from avoidance two years earlier between girls and boys (Lagrange multiplier test $\chi^2 = 5.42$, $df = 1$, $p < .05$) and a trend for a difference between boys and girls in the prediction from anxiety two years earlier (Lagrange multiplier test $\chi^2 = 3.44$, $df = 1$, $p < .10$). For boys,

although avoidance and collaboration with father were negatively correlated within the same time points (both at age 15 and 17) and anxiety and collaboration were negatively correlated only at age 17, there was no relation between attachment at age 15 and *later* collaboration with father at age 17. For girls, as hypothesized, avoidance with father negatively predicted later collaboration with father, accounting for 14% of the variance (standardized path coefficients = - .37, $p < .05$). However, opposite to the first study hypothesis and the findings for mother, the more girls were anxious about the availability of father, the more they collaborated with him two years later, with anxiety accounting for 1% of the variance (standardized path coefficients = +.12, $p < .05$).

The reverse model investigated whether collaboration with father at age 15 predicted attachment with father at age 17. This model fit the data more poorly (Satorra-Bentler scaled χ^2 (df) = 22.76 (17), $p = .16$, CFI = .98, RMSEA = .06*)*. Because the number of degrees of freedom was identical in this model and the previous one, the models could not be compared. Collaboration with father did not predict later attachment anxiety with father for either gender. However, there was a significant difference between boys and girls in the predictions of later avoidance with father from collaboration at age 15 (Lagrange multiplier test $\chi^2 = 10.66$, $df = 1$, $p < .01$). That is, the more girls collaborated with father at age 15, the less they avoided closeness with him two years later (standardized path coefficient = -.22, $p < .05$), accounting for 5% of the variance in avoidance, whereas the more boys collaborated with father, the *more* they tended to avoid closeness with him two years later (standardized path coefficient = +.13, $p < .10$). Interestingly, the difference between boys and girls in the stability of collaboration with father over time became significant in this model (Lagrange multiplier test $\chi^2 = 11.16$, *df*

= 1, $p < .01$), with collaboration at age 15 predicting age 17 only for girls (standardized path coefficient = .48, $p < .05$).

The bidirectional model for father fit the data very well (Satorra-Bentler scaled χ^2 (df) = 8.40 (13), $p = .82$, CFI = 1.00, RMSEA = .00, see *Figure 4)*, significantly better than both the hypothesized model without the reverse paths ($\Delta \chi^2$ (Δdf) = 11.17 (4), $p <$ .05, 1-tailed) and the reverse model ($\Delta \chi^2$ (Δdf) = 14.36 (4), $p < .01$, 1-tailed). As in the first model tested for father, only girls' attachment with father predicted later collaboration with him. Again, although collaboration with father did not predict later anxiety with father, it predicted later avoidance with father, albeit in different directions for boys and girls, as described above. Thus, there was a bidirectional relation between avoidance and collaboration with father for girls only.

Conflict Avoidance

Mother. The two-group model predicting conflict avoidance with mother at age 17 from attachment with mother at age 15 fit the data well (Satorra-Bentler scaled χ^2 (df) = 16.96 (20), $p = .65$, CFI = 1.00, RMSEA = .00, see *Figure 5*). There were no significant differences between boys and girls: chi-squares for the Lagrange multiplier test for all constraints were non-significant. For both adolescent genders, anxiety with mother did not predict later conflict avoidance with mother (standardized path coefficients = -.05, -.04, both *n.s.*), whereas attachment avoidance with mother predicted conflict avoidance with mother in the hypothesized direction, accounting for 7% of the variance in later conflict avoidance for boys, and 8% for girls (standardized path coefficients = .27, .29, respectively, both $p < .05$).

The reverse model examined whether conflict avoidance at age 15 predicted attachment with mother at age 17. This model fit the data poorly (Satorra-Bentler scaled χ^2 (df) = 34.08 (20), p = .03, CFI = .94, RMSEA = .08, see *Figure X)*. In contrast, the bidirectional model fit the data well (Satorra-Bentler scaled χ^2 (df) = 16.56 (18), p = .55, CFI = 1.00, RMSEA = .02*)* but was not significantly different than the hypothesized model ($\Delta \chi^2$ (Δdf) = .40 (2), p = .82, 1-tailed), although significantly better than the reverse model ($\Delta \chi^2$ (Δdf) = 17.52 (2), p < .001, 1-tailed). Given the lack of prediction from conflict avoidance to later attachment with mother, the hypothesized model is considered the most representative of the data.

Father. With respect to the relationship with father, the model predicting conflict avoidance with father at age 17 from attachment with father at age 15 fit the data well (Satorra-Bentler scaled χ^2 (df) = 19.66 (20), p = .48, CFI = 1.00, RMSEA = .00). Again, there were no significant differences between boys and girls, with all constraints having non-significant chi-squares for the Lagrange multiplier test. As with mother, for both boys and girls, there was no relation between anxiety with father at age 15 and conflict avoidance with him two years later (standardized path coefficients = -.07, -.06, both *n.s.*). However, as hypothesized and found within the relationship with mother, avoidance with father at age 15 positively predicted 3% of the variance in conflict avoidance with him two years later for boys, and 2% for girls (standardized path coefficients = .18, .15, respectively, both p < .05).

The reverse model also fit the data well (Satorra-Bentler scaled χ^2 (df) = 18.87 (20), p = .53, CFI = 1.00, RMSEA = .00), with no significant differences between boys and girls. The models could not be compared, given that they had the same number of

degrees of freedom. Conflict avoidance positively predicted later avoidance of attachment closeness with father, accounting for 2% of the variance for both boys and girls (standardized path coefficients = .13, .14, respectively, both $p < .05$). Conflict avoidance did not predict later anxiety with father, for either gender (standardized path coefficients = -.02, *n.s.* for both).

The bidirectional model also fit the data very well (Satorra-Bentler scaled χ^2 (df) = 13.56 (18), $p = .76$, CFI = 1.00, RMSEA = .00, see *Figure 6*), significantly better than the model without the reverse paths ($\Delta \chi^2$ (Δdf) = 6.10 (2) , $p < .05$, 1-tailed), and a trend for fitting better than the reverse model ($\Delta \chi^2$ (Δdf) = 5.31 (2), $p = .07$, 1-tailed). Again, there were no significant differences between boys and girls. In this best-fitting model, anxiety and conflict avoidance with father were unrelated longitudinally. However, for both boys and girls, avoidance with father at age 15 predicted conflict avoidance with him two years later (standardized path coefficients = .17, .14, respectively, both $p < .05$) and the reverse relation was also significant (standardized path coefficients = .12, .14, respectively, both $p < .05$).

Stalemate

Mother. The hypothesized model predicting stalemate with mother at age 17 from attachment with mother at age 15 fit the data well (Satorra-Bentler scaled χ^2 (df) = 16.63 (20), $p = .68$, CFI = 1.00, RMSEA = .00). There were no significant differences between boys and girls for any of the paths, with all constraints having non-significant chi-squares for the Lagrange multiplier test. However, attachment anxiety and avoidance with mother at age 15 did not predict stalemate with mother two years later either for boys

(standardized path coefficients = -.03, .06, both *n.s.*), or girls (standardized path coefficients = -.02, .06, both *n.s.*). Thus the hypothesis that anxiety would predict later stalemate was not supported. Although there was no longitudinal prediction of stalemate with mother, anxiety and stalemate correlated significantly at age 15 (r = .14, .10, for boys and girls respectively, both $p < .05$), and tended to correlate at age 17 (r = .12, .09, for boys and girls respectively, both $p < .10$).

The reverse model fit the data well (Satorra-Bentler scaled χ^2 (df) = 16.38 (20), p = .69, CFI = 1.00, RMSEA = .00), again with no significant differences between boys and girls. Stalemate with mother at age 15 did not predict attachment anxiety or avoidance with mother two years later, either for boys (standardized path coefficients = .05, .05, both *n.s.*), or girls (standardized path coefficients = .06, .04, both *n.s.*). This model could not be compared to the previous model due to equality in degrees of freedom.

The bidirectional model also fit the data well (Satorra-Bentler scaled χ^2 (df) = 15.45 (18), p = .63, CFI = 1.00, RMSEA = .00), with no significant differences between boys and girls. This model was not significantly better, however, than the hypothesized model ($\Delta \chi^2$ (Δdf) = 1.18 (2), p = .55, 1-tailed) or the reverse model ($\Delta \chi^2$ (Δdf) =.93 (2), p = .63, 1-tailed). Paths from attachment at age 15 to stalemate two years later, and from stalemate at age 15 and attachment two years later, were non-significant, as described in the two previous models.

Father. The model predicting stalemate with father at age 17 from attachment with father at age 15 fit the data well (Satorra-Bentler scaled χ^2 (df) = 12.60 (20), p = .89,

CFI = 1.00, RMSEA = .00). There were no significant differences between boys and girls for any of the paths, with no Lagrange multiplier test chi-squares being significant. Contrary to prediction, attachment anxiety with father did not correlate with stalemate with father within the same time point, nor did it predict stalemate with father two years later for either boys or girls (both standardized path coefficients = -.02, *n.s.*). Unexpectedly, attachment avoidance with father tended to predict stalemate with father two years later for both boys and girls, accounting for approximately 1% of the variance (standardized path coefficients = .11, .10, $p < .10$).

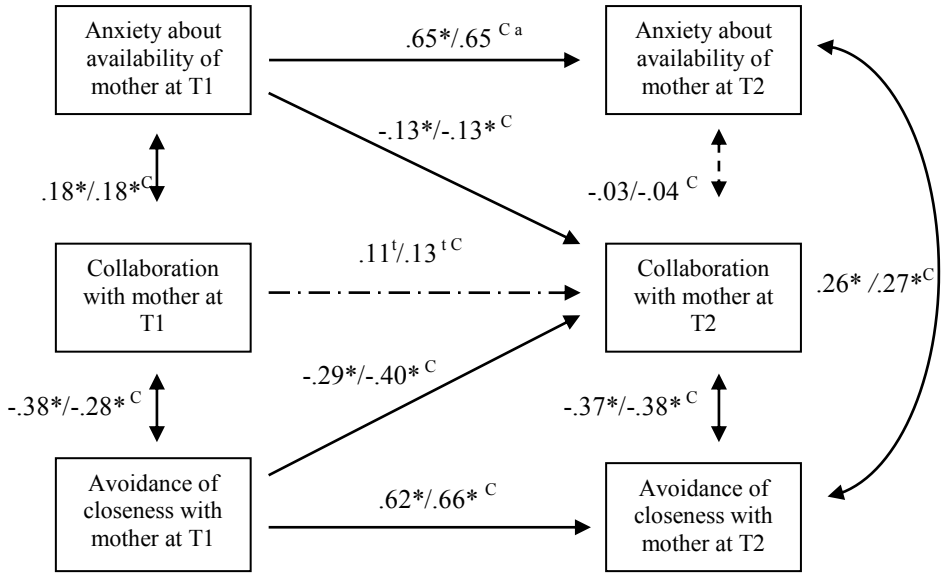
The reverse model also fit the data well (Satorra-Bentler scaled χ^2 (df) = 10.78 (20), $p = .95$, CFI = 1.00, RMSEA = .00), with no significant differences between boys and girls. The model could not be compared to the previous model, given that they both had the same number of degrees of freedom. Stalemate with father at age 15 did not predict later anxiety with father for either boys or girls (both standardized path coefficients = .03, *n.s.*). However, stalemate with father positively predicted approximately 1% of the variance in later avoidance with father, for both boys and girls (standardized path coefficient = .11, .12, $p < .05$).

The bidirectional model also fit the data well (Satorra-Bentler scaled χ^2 (df) = 9.15 (18), $p = .96$, CFI = 1.00, RMSEA = .00, see *Figure 7*), again with no significant differences between boys and girls. However, this model was not significantly better than the hypothesized model without the reverse paths ($\Delta\chi^2$ (Δdf) = 3.45 (2), $p = .18$, 1-tailed), nor the reverse model ($\Delta \chi^2$ (Δdf) = 1.63 (2), $p = .44$, 1-tailed). In this model, as above, there was no relation between attachment anxiety and stalemate with father at any time point. However, stalemate at age 15 accounted for 1% of the variance in later avoidance

with father (standardized path coefficient = .11, .12, for boys and girls respectively, $p <$ .05), and avoidance accounted for 1% of the variance in later stalemate with father, although this relation did not reach significance (standardized path coefficient = .10, .09, *n.s.*).

Appendix A3: Structural equation models, in the order tested

Figure A1: Attachment with mother predicts collaboration with mother two years later

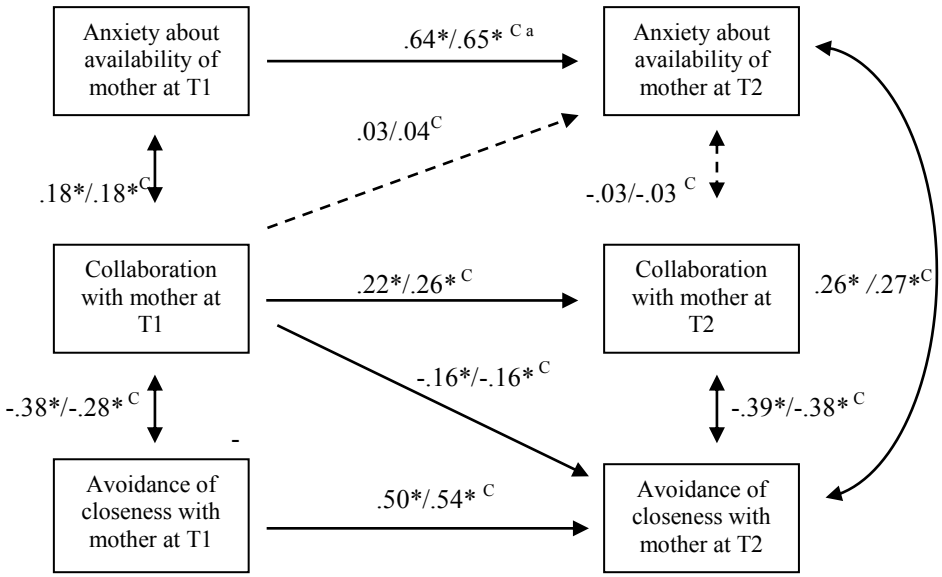


Satorra-Bentler scaled χ^2 (df) = 22.61 (20), p = .31, CFI = .99, RMSEA = .04.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A2: Reverse model for attachment and collaboration with mother

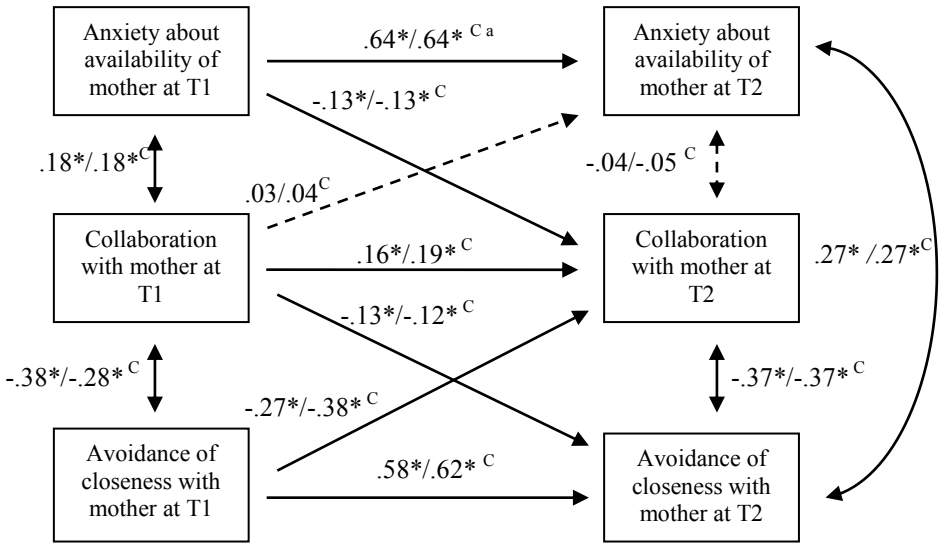


Satorra-Bentler scaled χ^2 (df) = 42.50 (20), p = .00, CFI = .90, RMSEA = .11.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A3: Bidirectional model for attachment with mother and collaboration with mother



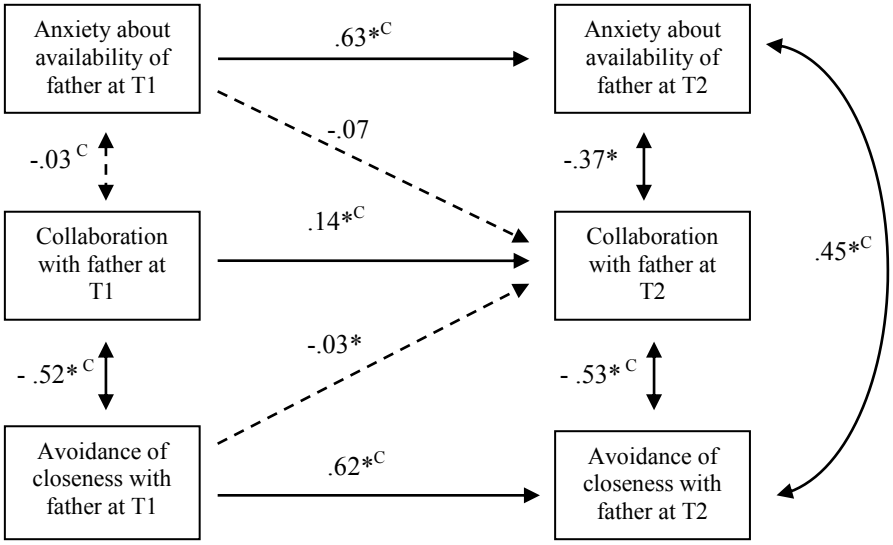
Satorra-Bentler scaled χ^2 (df) = 18.73 (18), p = .41, CFI = 1.00, RMSEA = .02.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

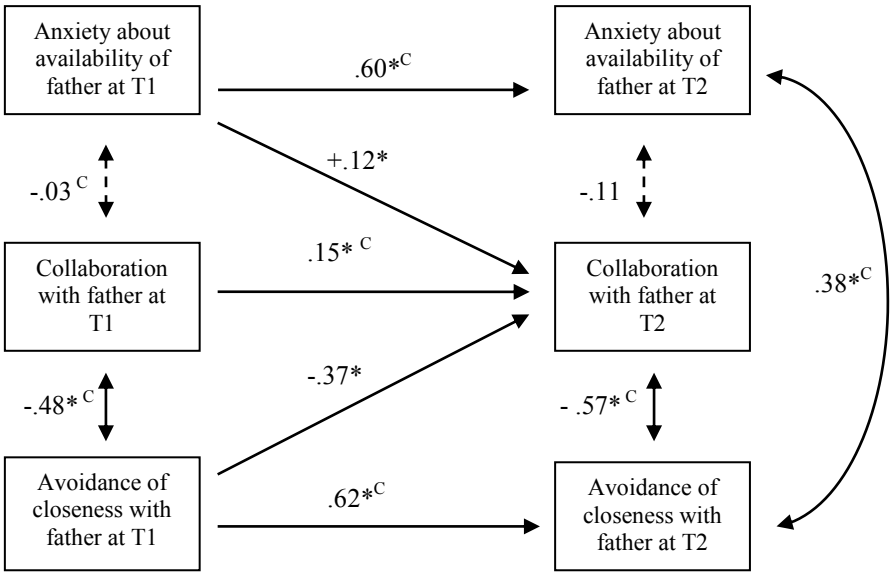
* $p < .05$, $^{t}p < .10$, ^{C} Path constrained to be equal for boys and girls.

Figure A4: Attachment with father predicts collaboration with father two years later for girls only

Boys



Girls



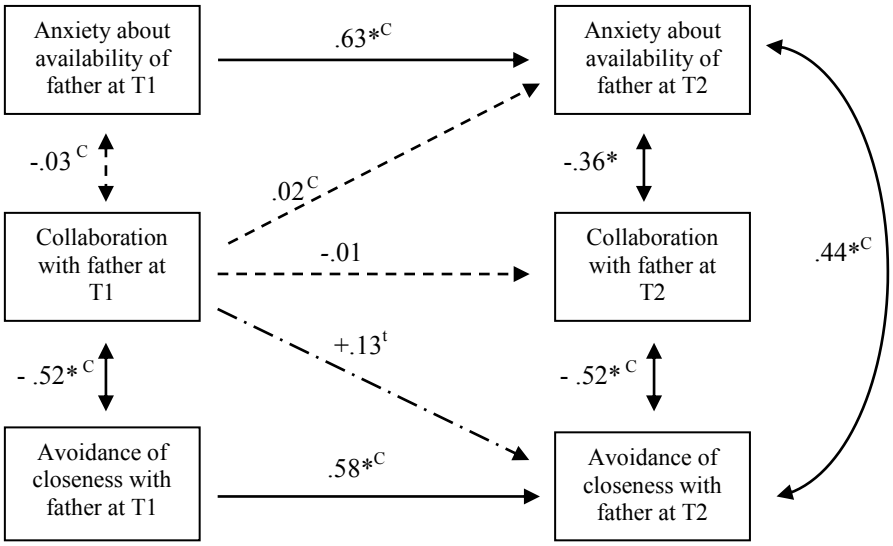
Satorra-Bentler scaled χ^2 (df) = 19.57 (17), p = .30, CFI = .99, RMSEA = .04.

[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

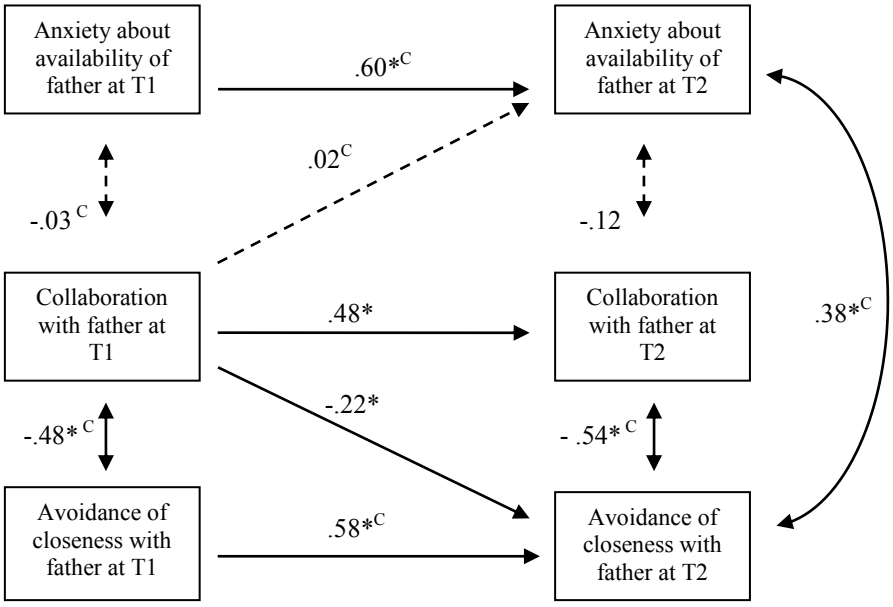
* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A5: Reverse model for attachment and collaboration with father

Boys



Girls



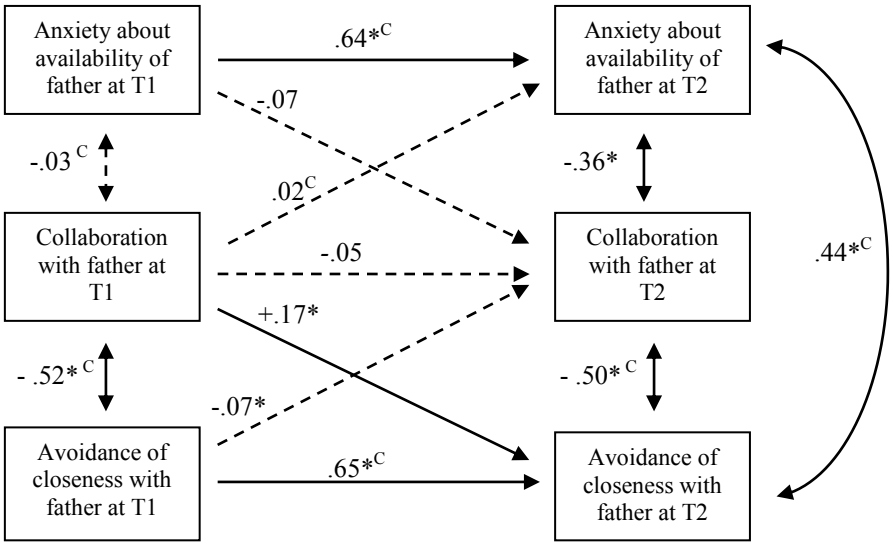
Satorra-Bentler scaled χ^2 (df) = 22.76 (17), p = .16, CFI = .98, RMSEA = .06.

[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

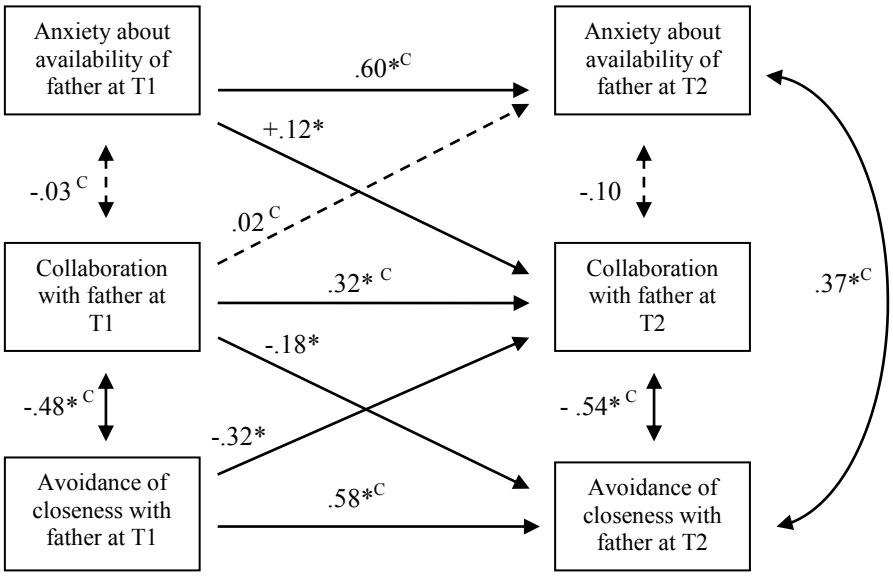
* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A6: Birdirectional model for attachment and collaboration with father

Boys



Girls

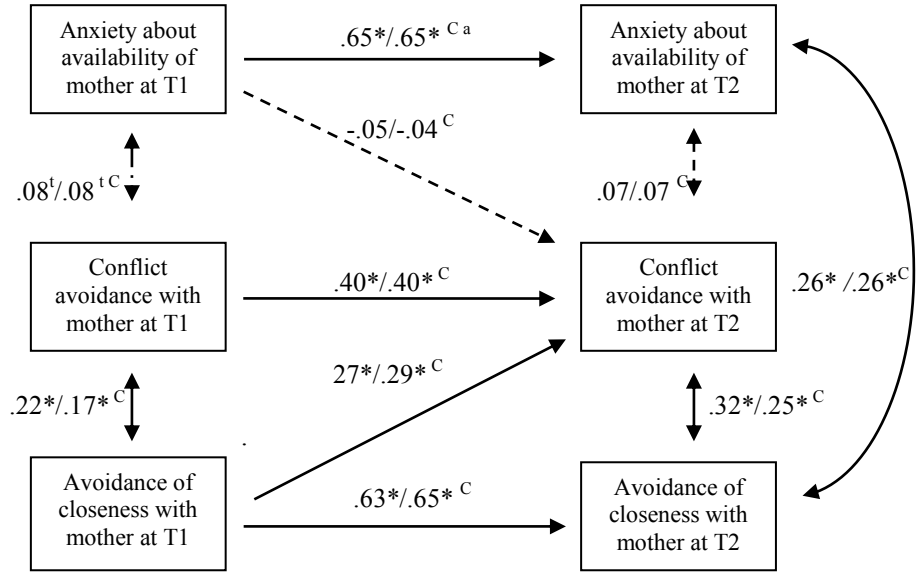


Satorra-Bentler scaled χ^2 (df) = 8.40 (13), p = .82, CFI = 1.00, RMSEA = .00.

[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A7: Attachment avoidance predicts conflict avoidance with mother two years later

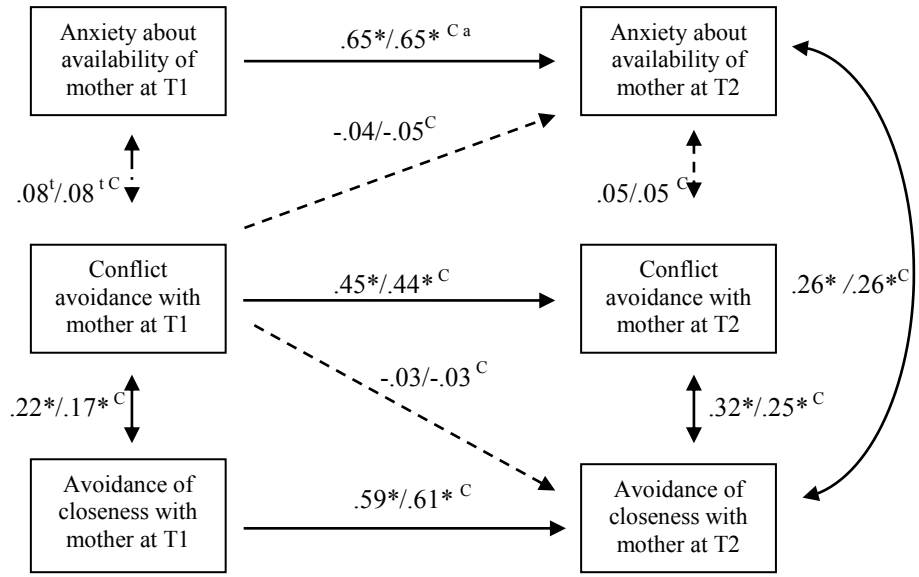


Satorra-Bentler scaled χ^2 (df) = 16.96 (20), p = .65, CFI = 1.00, RMSEA = .00.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A8: Reverse model for attachment and conflict avoidance with mother

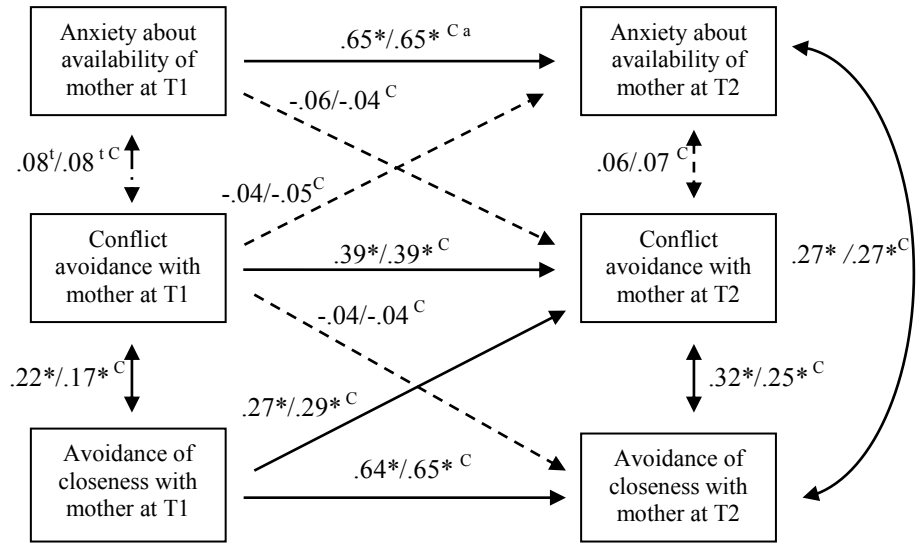


Satorra-Bentler scaled χ^2 (df) = 34.08 (20), p = .03, CFI = .94, RMSEA = .08.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A9: Bidirectional model for attachment and conflict avoidance with mother

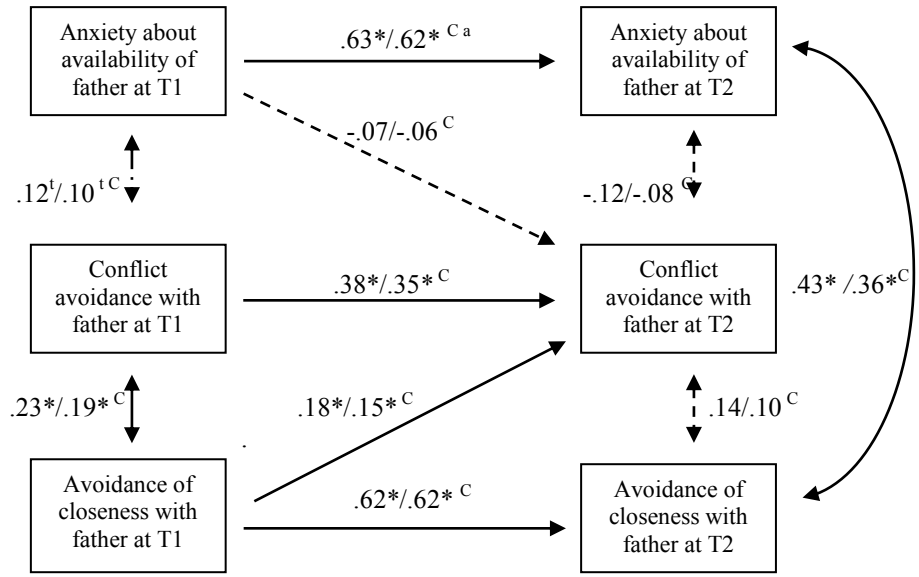


Satorra-Bentler scaled χ^2 (df) = 16.56 (18), p = .55, CFI = 1.00, RMSEA = .02.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A10: Attachment avoidance with father predicts conflict avoidance with father

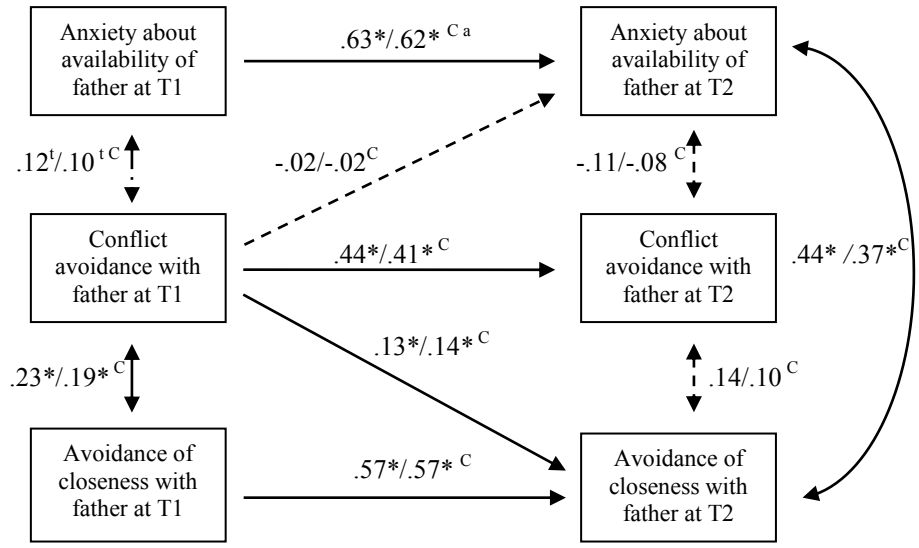


Satorra-Bentler scaled χ^2 (df) = 19.66 (20), p = .48, CFI = 1.00, RMSEA = .00.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A11: Reverse model for attachment and conflict avoidance with father

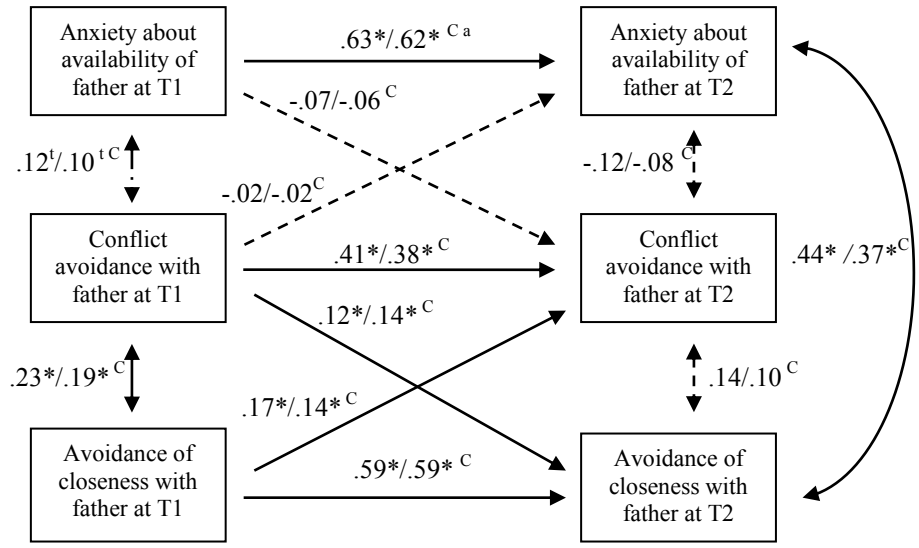


Satorra-Bentler scaled χ^2 (df) = 18.87 (20), p = .53, CFI = 1.00, RMSEA = .00.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A12: Bidirectional model for attachment and conflict avoidance with father

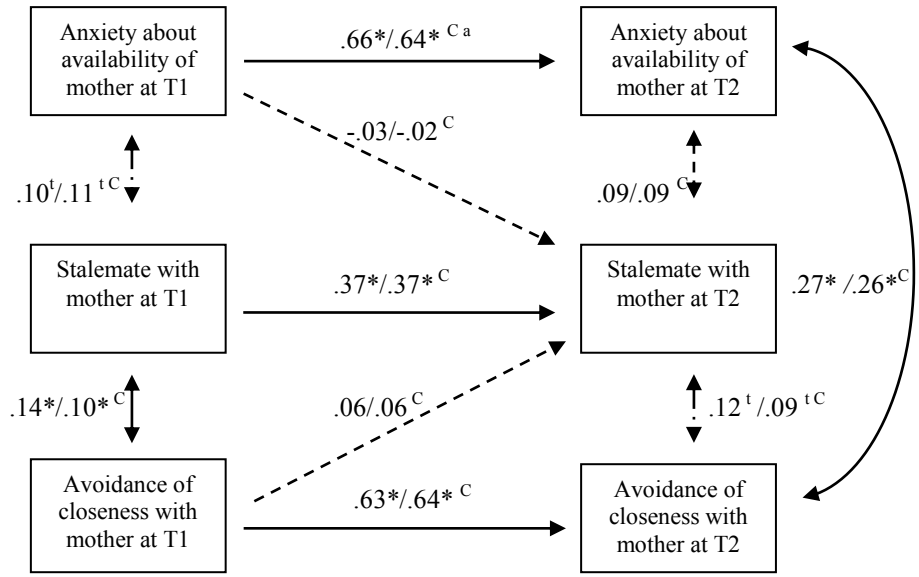


Satorra-Bentler scaled χ^2 (df) = 13.56 (18), p = .76, CFI = 1.00, RMSEA = .00.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A13: Attachment with mother does not predict stalemate with mother two years later

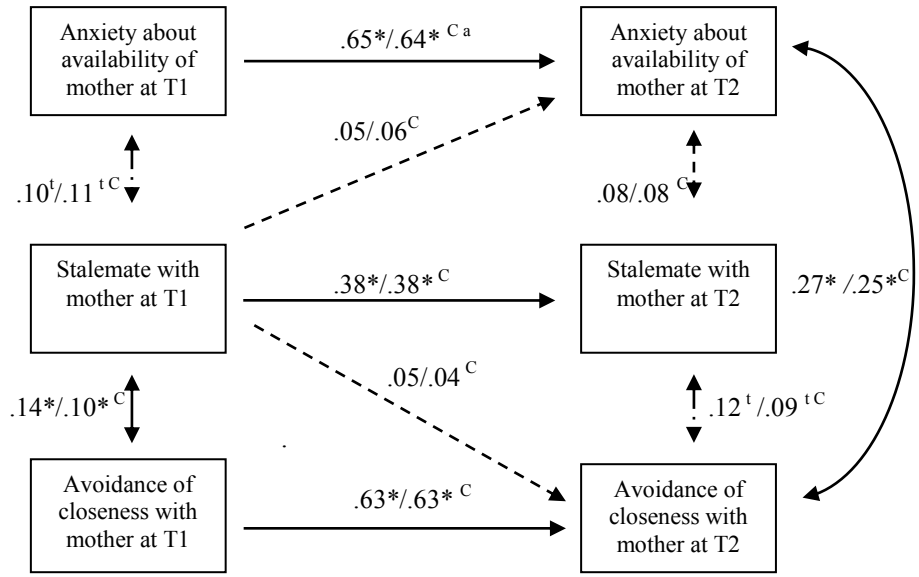


Satorra-Bentler scaled χ^2 (df) = 16.63 (20), p = .68, CFI = 1.00, RMSEA = .00.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A14: Reverse model for attachment and stalemate with mother

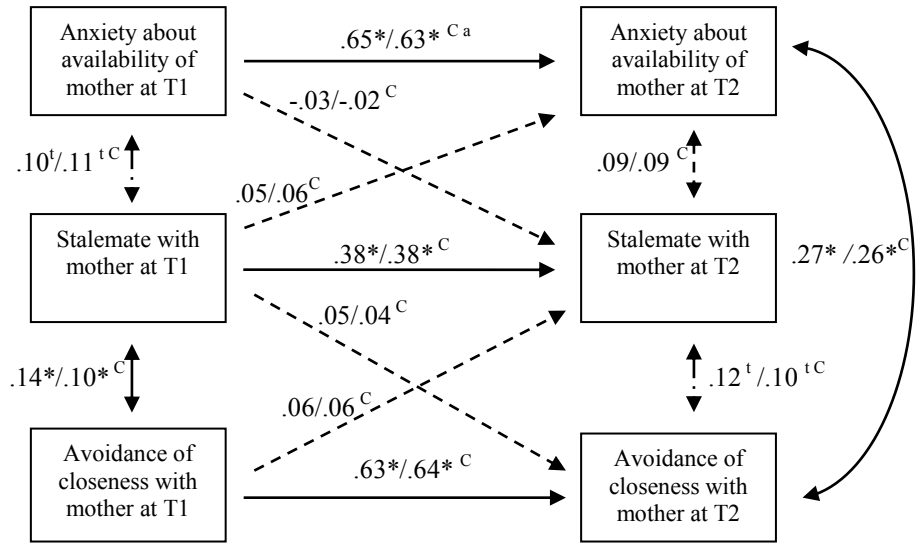


Satorra-Bentler scaled χ^2 (df) = 16.38 (20), p = .69, CFI = 1.00, RMSEA = .00.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A15: Bidirectional model for attachment and stalemate with mother

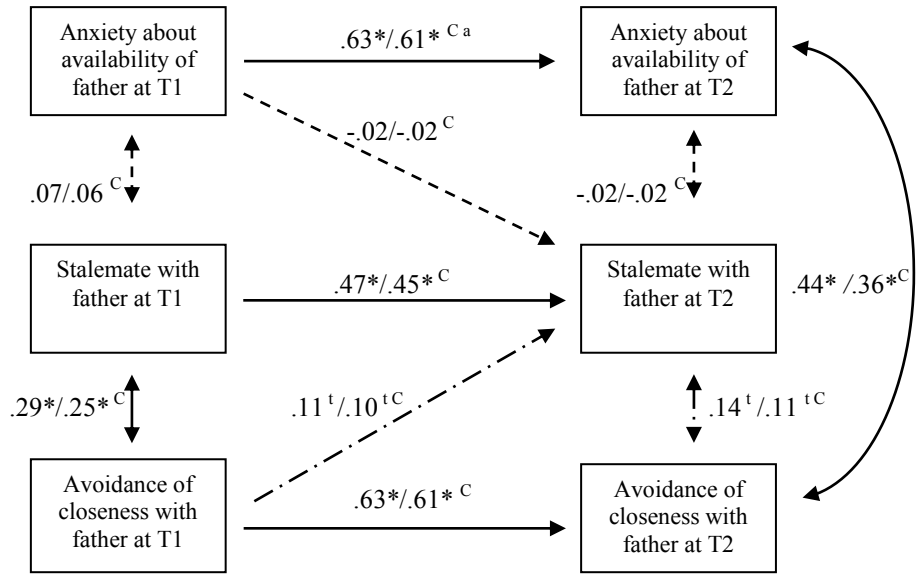


Satorra-Bentler scaled χ^2 (df) = 15.45 (18), p = .63, CFI = 1.00, RMSEA = .00.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A16: Attachment avoidance tends to predict stalemate with father two years later

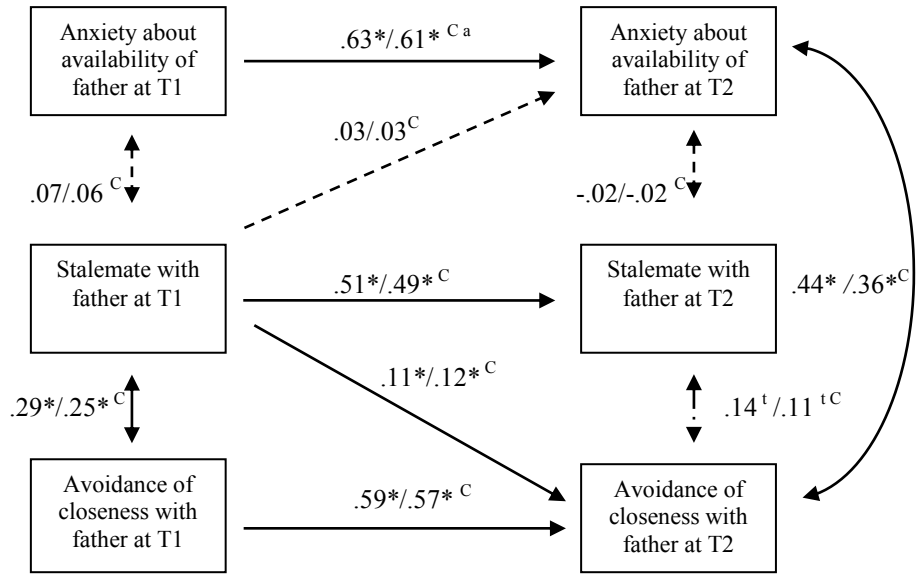


Satorra-Bentler scaled χ^2 (df) = 12.60 (20), p = .89, CFI = 1.00, RMSEA = .00.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A17: Reverse model for attachment and stalemate with father

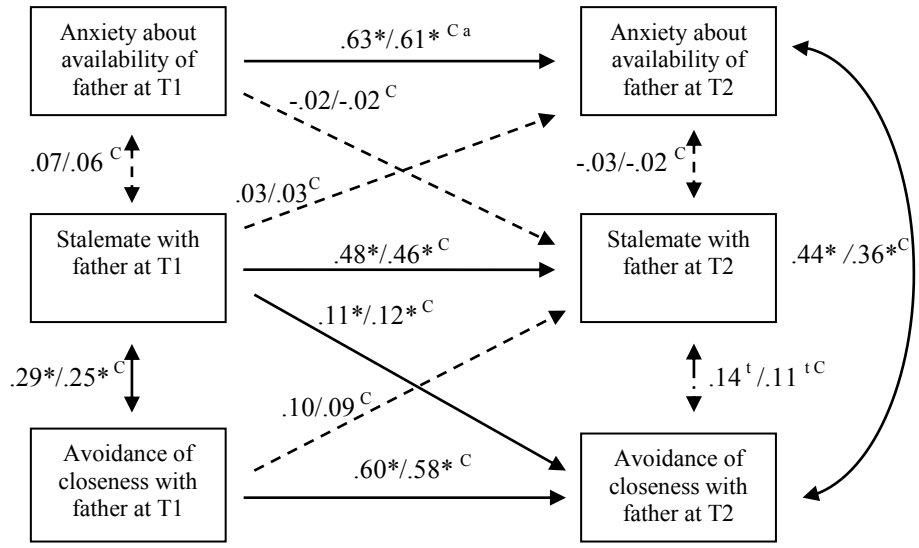


Satorra-Bentler scaled χ^2 (df) = 10.78 (20), p = .95, CFI = 1.00, RMSEA = .00.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure A18: Bidirectional model for attachment and stalemate with father



Satorra-Bentler scaled χ^2 (df) = 9.15 (18), p = .96, CFI = 1.00, RMSEA = .00.

[a] Path coefficients on the left of the slash are for boys, and on the right for girls. All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Appendix B

Study 2 additional preliminary analyses, results and discussion

Appendix B1: Additional preliminary analyses

Additional Missing Data analyses

According to Rubin's missing data types (1976, as cited in McKnight, McKnight, Sidani, & Figueredo, 2007), if the data is not MCAR, it is either missing at random (MAR) or missing not at random (MNAR). If it is MAR, the occurrence of missing responses is related to other characteristics of the participants, rather than being due to pure chance. If it is MNAR, the missingness would be related to the value that would have been observed, thereby affecting the validity of the results. Although there are no direct tests of MAR or MNAR, separate variance t-tests can provide some exploration of what variables relate to the missingness in the study variables.

Separate variance t-tests of a Missing Value Analysis also suggested that the data was not missing completely at random. The means of certain demographic variables were significantly different when a given study variable was missing versus not missing. For example, for collaboration with friend at Time 5, participants who had missing data on this variable had lower grades (M = 64%) than those who did not have missing data (M = 70%), a significant difference (t (52) = 2.5, $p < .05$, 2-tailed). A similar pattern with respect to grades was found for a number of other conflict resolution variables. At times, missingness in one study variable was related to another study variable. For example, for conflict avoidance with mother at Time 3, those who had missing data on this variable had a higher mean score on avoidance of closeness with father at Time 3 (M = 3.47) than those who did not have missing data (M = 2.40), a significant difference (t (7.5) = -2.4, $p < .05$, 2-tailed). That is, those who did not complete the conflict avoidance with mother questionnaire were more avoidant of closeness with father than those who did complete

the questionnaire. Thus, both demographic variables such as academic grades, and other study variables, such as attachment variables, might impact on whether a participant would have missing data for a given questionnaire.

Although it is impossible to assess whether the missingness of a variable is due to the variable itself (i.e., MNAR), one advantage of longitudinal studies such as this one is that participants missing and not missing data on a given variable can be compared in terms of their responses on the same variable at a different time point (e.g., whether missingness of collaboration with friend at Time 5 is related to participants' responses on friend collaboration questionnaires of other years of the study). Within attachment research, this issue is particularly important given that attachment avoidance could be hypothesized to affect the willingness of participants to answer a questionnaire about attachment avoidance. According to attachment theory, one could predict that those who are high on attachment avoidance might be uncomfortable with questions relating to comfort with intimacy, thereby creating a biased sample of responders. However, separate variance t-tests for the attachment variables indicated that missingness in anxious and avoidant attachment with mother and father at Time 1 was not related to responses on attachment questionnaires in later years of the larger longitudinal study (i.e. no significant difference between the means of participants who completed the attachment questionnaires at Time 1 and those who did not). Similarly, there were no significant differences between the means of adolescents who completed the conflict resolution questionnaires for mother, father, and best friend, as compared to those who did not, on the conflict resolution measures given at other years of the larger longitudinal study.

Table B1: Percentage of missing data, means and standard deviations of study variables by adolescent gender

	Boys		Girls	
	M	*SD*	*M*	*SD*
Attachment at Time 1				
Anxiety with mother	2.96	1.17	2.81	.94
Avoidance with mother	3.15	1.10	2.71	1.38
Anxiety with father	2.85	1.16	2.93	1.28
Avoidance with father	3.28	1.18	3.43	1.42
Proposed mediators				
General anxiety at Time 2	2.87	1.07	3.19	1.12
General avoidance at Time 2	2.99	.78	2.63	.91
Collaboration with mother at Time 3	2.13	.56	2.27	.60
Collaboration with father at Time 3	2.03	.67	1.91	.76
Conflict avoidance with mother at Time 3	1.39	.72	1.39	.87
Conflict avoidance with father at Time 3	1.32	.74	1.41	.85
Stalemate with mother at Time 3	1.19	.68	1.34	.79
Stalemate with father at Time 3	1.01	.64	1.22	.76
Criterion variables at Time 4/5				
Collaboration with best friend	2.37	.37	2.62	.32
Conflict avoidance with best friend	1.10	.53	1.05	.59
Stalemate with best friend	.91	.53	1.01	.57
Control variables				
Social desirability average (at time 1 to 5	.51	.15	.46	.17

** The average social desirability score was computed after imputing the data for social desirability for each year separately. This is the percent missing for social desirability at Time 1.*

Table B2: Intercorrelations between predictor, mediator, criterion, and control variables for boys and girls separately

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Predictors (Time 1)																
1. Anxiety mother		.34**	.78**	.19^{t}	.42**	.21*	-.08	-.07	.14	.03	.30**	.12	-.06	-.09	-.03	-.23*
2. Avoidance mother	.21*		.40**	.24*	.29**	.30**	-.18^{t}	-.13	.24*	.13	.24*	.09	-.18^{t}	.05	-.08	-.23*
3. Anxiety father	.80**	.21*		.18^{t}	.43**	.20*	-.04	.01	.13	-.07	.32**	.02	-.05	-.09	.00	-.17^{t}
4. Avoidance father	.23*	.68**	.21*		.07	.21*	-.07	-.41**	-.07	.15	.05	.09	-.16^{t}	-.01	-.00	-.18^{t}
Mediators 1 (Time 2)																
5. General anxiety	.37**	.28**	.34**	.15		.39**	-.08	-.18^{t}	.15	.09	.26**	.11	-.08	.18^{t}	.22*	-.36**
6. General avoidance	.01	.31**	.05	.24*	.25*		-.13	-.12	.08	.04	.23*	.06	-.31**	.22*	.25*	-.18^{t}
Mediators 2 (Time 3)																
7. Collaboration mother	-.15	-.33**	-.13	-.17^{t}	-.06	-.07		.57**	-.32**	-.22*	-.29**	-.21*	.33**	-.22*	-.25*	.15
8. Collaboration father	-.17^{t}	-.14	-.08	-.22*	-.11	-.10	.71**		-.06	-.13	-.21*	-.18^{t}	.25*	-.20*	-.20*	.15
9. Conflict avoidance mother	.11	.10	.21*	-.01	.30**	.11	-.05	.10		.73**	.62**	.57**	-.04	.42**	.27**	-.43**
10. Conflict avoidance father	.19^{t}	.12	.29**	.12	.33**	.19^{t}	.13	.19^{t}	.81**		.48**	.67**	-.11	.43**	.28**	-.36**
11. Stalemate mother	.18^{t}	.05	.25*	.18^{t}	.22*	.08	-.18^{t}	-.09	.52**	.42**		.72**	-.22*	.32**	.41**	-.48**
12. Stalemate father	.17^{t}	.04	.23*	.23*	.17^{t}	.11	-.06	-.01	.42**	.54**	.82**		-.17^{t}	.38**	.46**	-.37**
Criterion variables (T4/5)																
13. Collaboration friend	-.22*	-.22*	-.27**	-.19^{t}	-.35**	-.25*	.06	.18^{t}	-.30**	-.26*	-.29**	.10		-.30**	-.25**	.29**
14. Conflict avoidance friend	.20^{t}	-.01	.23*	.02	.19^{t}	.08	.06	-.04	.22*	.37**	.06	.21*	-.25*		.59**	-.38**
15. Stalemate friend	.30**	-.10	.25*	.10	.19^{t}	-.02	.14	-.08	.10	.28**	.25*	.37**	-.24*	.62**		-.33**
Control variables																
16. Social Desirability T1-5	-.07	-.19^{t}	-.04	-.20*	-.28**	-.09	.09	.17^{t}	-.33**	-.34**	-.41**	-.35**	.42**	-.33*	-.30**	

Correlations below the diagonal are for boys (n = 98) and above the diagonal are for girls (n = 103), ^{t} $p < .10$, * $p < .05$, ** $p < .01$

Table B3: Partial correlations between predictor, mediator, and criterion variables, controlling for the mean of social desirability at Time 1 to 5, for boys and girls separately

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Predictors (Time 1)															
1. Anxiety mother		.30**	.77**	.16	.37**	.17 ^{t}	-.04	-.04	.05	-.06	.22*	.03	.01	-.20*	-.11
2. Avoidance mother	.20 ^{t}		.38**	.21*	.23*	.27**	-.15	-.10	.17 ^{t}	.05	.15	.01	-.12	-.04	-.17 ^{t}
3. Anxiety father	.80**	.20*		.16	.40**	.18 ^{t}	-.02	.04	.06	-.14	.28**	-.04	.00	-.17 ^{t}	-.06
4. Avoidance father	.23*	.67**	.20*		.00	.18 ^{t}	-.04	-.39**	-.16	.09	-.04	.03	-.12	-.08	-.06
Mediators 1 (Time 2)															
5. General anxiety	.37**	.24*	.34**	.10		.35**	-.03	-.14	-.01	-.05	.10	-.03	.02	.05	.11
6. General avoidance	.00	.30**	.05	.22*	.24*		-.10	-.10	.00	-.03	.16 ^{t}	-.01	-.27**	.17 ^{t}	.20*
Mediators 2 (Time 3)															
7. Collaboration mother	-.14	-.32**	-.13	-.16	-.03	-.06		.56**	-.29**	-.18 ^{t}	-.25**	-.17 ^{t}	.30**	-.17 ^{t}	-.21*
8. Collaboration father	-.17	-.11	-.07	-.19 ^{t}	-.07	-.08	.71**		.01	-.08	-.15	-.13	.21*	-.16	-.16
9. Conflict avoidance mother	.10	.04	.21*	-.09	.22*	.09	-.02	.17 ^{t}		.68**	.52**	.49**	.09	.30**	.15
10. Conflict avoidance father	.18 ^{t}	.07	.29**	.06	.25*	.17	.18 ^{t}	.27**	.79**		.37**	.61**	.00	.34**	.18 ^{t}
11. Stalemate mother	.16	-.03	.26*	.11	.11	.05	-.16	-.02	.44**	.32**		.67**	-.09	.17 ^{t}	.30**
12. Stalemate father	.16	-.02	.23*	.17 ^{t}	.08	.08	-.03	.05	.35**	.48**	.79**		-.07	.28**	.38**
Criterion variables (Time 4/5)															
13. Collaboration friend	-.21*	-.16	-.28**	-.11	-.26**	-.23*	.02	.12	-.19 ^{t}	-.14	-.14	.06		-.22*	-.17 ^{t}
14. Conflict avoidance friend	.19 ^{t}	-.06	.23*	-.03	.13	.06	.08	.00	.15	.32**	-.04	.14	-.17 ^{t}		.53**
15. Stalemate friend	.27**	-.17	.25*	.05	.12	-.05	.17 ^{t}	-.03	.00	.20*	.15	.30**	-.13	.59**	

Correlations below the diagonal are for boys (n = 98) and above the diagonal are for girls (n = 103), ^{t} $p < .10$, * $p < .05$, ** $p < .01$

Normality of the data and MANCOVAs

The three criterion variables were examined for normality, skewness, and kurtosis, prior to multiple imputation of the missing data. The average of collaboration, conflict avoidance, and stalemate at Time 4 and 5 were all normally distributed.

With respect to the gender X parent multivariate analysis of covariance predicting attachment anxiety and avoidance, with parent as a within-participant factor, controlling for social desirability (mean of Time 1 to 5) (*see table below*), results indicated that there was heterogeneity of variance only for anxiety with mother (F (1, 198) = 7.07, $p < .01$). However, because there was a relatively large and equal number of boys and girls in the sample (n = 98, n = 103), the F-tests were considered robust. There were no gender differences in anxious or avoidant attachment ($\Lambda = .99$, F (2, 196) = 1.29, $p = .28$, multivariate $\eta^2 = .01$), and a multivariate main effect for parent was not found ($\Lambda = .99$, F (2, 196) = .74, $p = .48$, multivariate $\eta^2 = .01$).

Gender X Parent MANCOVA Table B4: Multivariate effects of gender of adolescent and parent on attachment style with parents, with parent as within-participant factor

Effect	Wilks' Λ	*df*	*F*	η^2
		Between subjects		
Social desirability (T1-5)	.94	2	6.26**	.06
Sex	.99	2	1.29	.01
Error		196		
		Within subjects		
Parent	.99	2	.74	.01
Parent X social desirability	1.00	2	.03	.00
Parent X sex	.92	2	8.98***	.08
Error		196		

* $p < .05$, ** $p < .01$, *** $p < .001$

With respect to the multivariate analysis of covariance conducted to examine the effect of adolescent gender on attachment anxiety and avoidance with others in general (controlling for $T_{1\text{-}5}$ social desirability) (*see table below*), results indicated homogeneity of variance for both general anxiety and avoidance. For the multivariate analysis of variance examining the effect of adolescent gender on the three conflict management styles used with best friend (controlling for $T_{1\text{-}5}$ social desirability), results again indicated homogeneity of variance for all three conflict management styles.

MANCOVA Table B5: Multivariate effect of gender of adolescent on general attachment

Effect	Wilks' Λ	*df*	*F*	η^2
Social desirability (T1-5)	.89	2	12.11***	.11
Sex	.92	2	8.62***	.08
Error		201		

* $p < .05$, ** $p < .01$, *** $p < .001$

The multivariate analysis of covariance conducted to examine the effect of adolescent gender on collaboration, conflict avoidance, and stalemate is presented below as well.

MANCOVA Table B6: Multivariate effect of gender of the adolescent on conflict management with best friend

Effect	Wilks' Λ	*df*	*F*	η^2
Social desirability	.81	3	15.62***	.19
Sex	.83	3	14.15***	.18
Error		200		

* $p < .05$, ** $p < .01$, *** $p < .001$

The last gender X parent MANCOVA examined the effects of gender of the adolescent and the target parent on conflict management style, with collaboration, conflict avoidance, and stalemate as dependent variables and parent as a within-participant factor, controlling for $T_{1\text{-}5}$ social desirability (*see table below*). Heterogeneity of variance was found only for collaboration with father (F (1, 197) = 4.66, $p < .05$), but again the F-tests were considered robust because there was a relatively large and equal number of boys and girls in the sample (n = 98, n = 103). There were no overall gender differences in conflict management with parents (Wilks' Λ = .98, F (3, 194) = 1.04, p = .38, multivariate η^2 = .02).

Gender X Parent MANCOVA Table B7: Multivariate effects of gender of adolescent and target parent on conflict management style with parent, with parent as within-participant factor

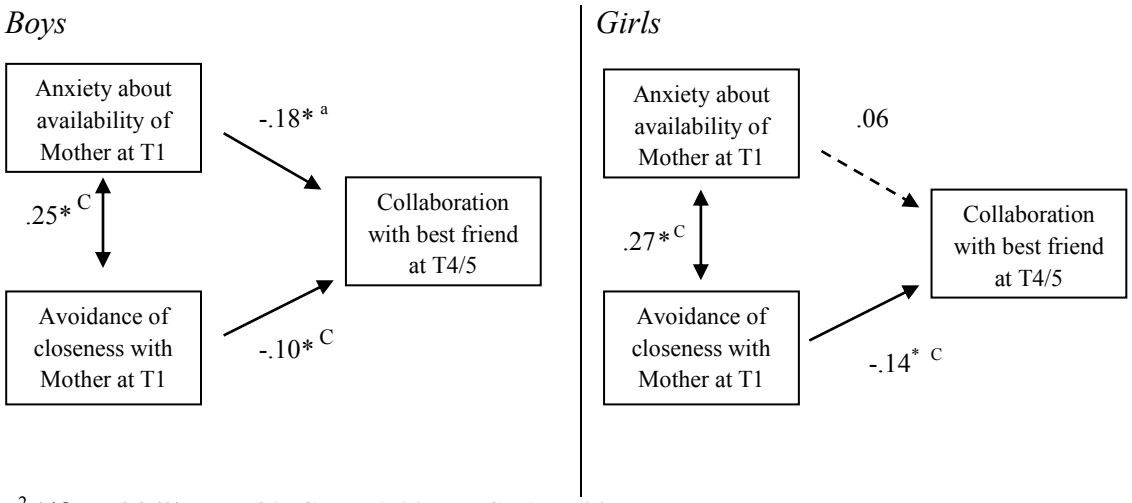
Effect	Wilks' Λ	*df*	*F*	η^2
	Between subjects			
Social desirability (T1-5)	.77	3	19.24***	.23
Sex	.98	3	1.04	.02
Error		194		
	Within subjects			
Parent	.91	3	6.61***	.09
Parent X social desirability	.97	3	2.09	.03
Parent X sex	.95	3	3.46*	.05
Error		194		

* $p < .05$, ** $p < .01$, *** $p < .001$

Appendix B2: Additional structural equation models

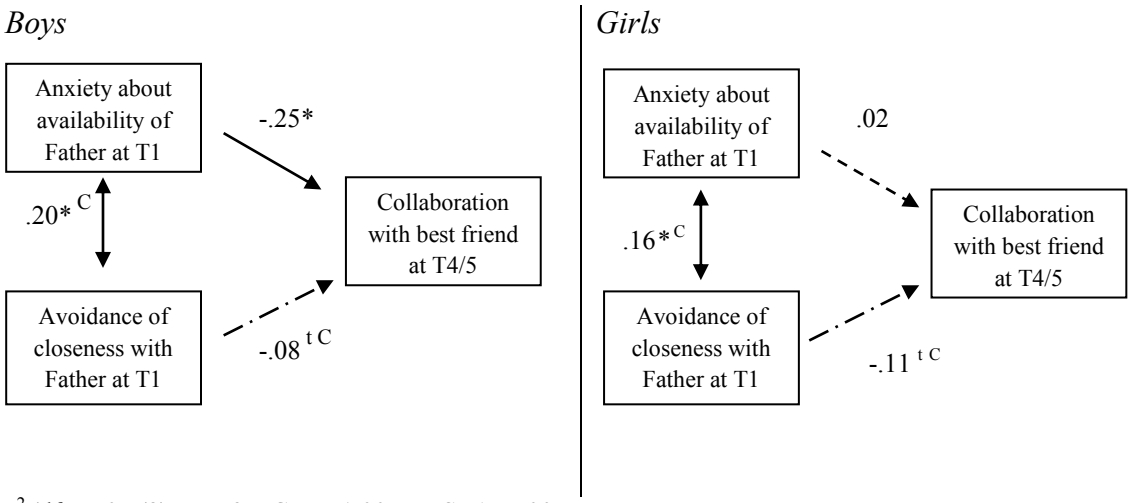
Figure B1: Direct models: Attachment insecurity predicting collaboration with best friend

Predicting from attachment with mother



χ^2 (df) = .46 (2), p = .80, CFI = 1.00, RMSEA = .00

Predicting from attachment with father



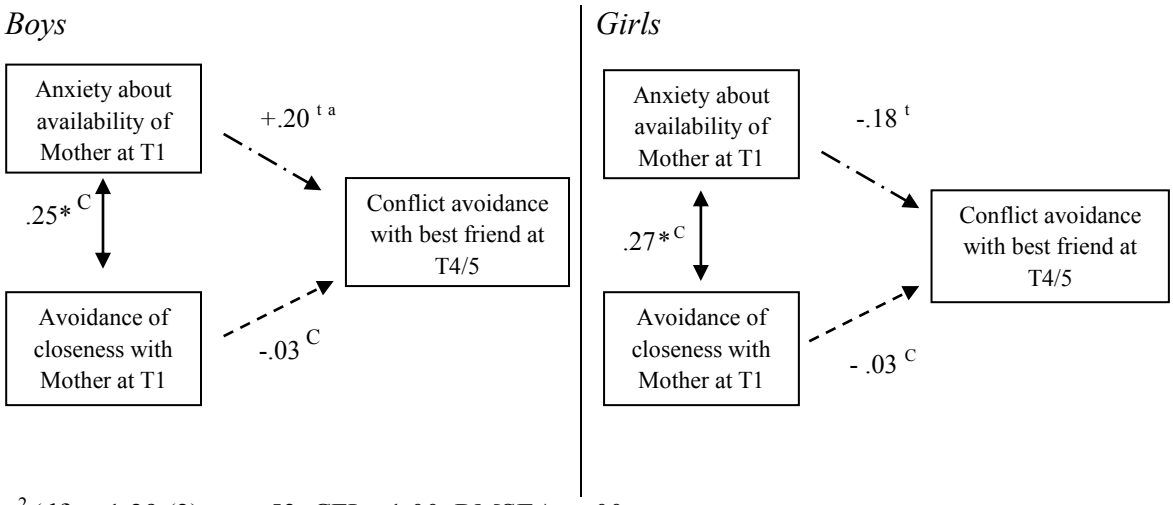
χ^2 (df) = .05 (2), p = .97, CFI = 1.00, RMSEA = .00

[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

* $p < .05$, $^t p < .10$, ^{C} Path constrained to be equal for boys and girls.

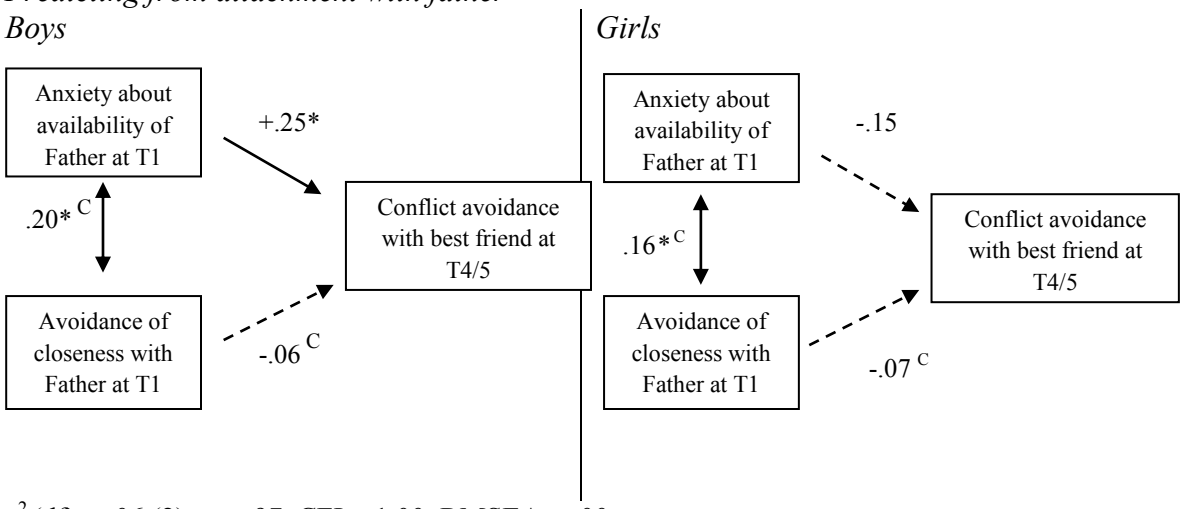
Figure B2: Direct models: Attachment insecurity predicting conflict avoidance with best friend

Predicting from attachment with mother



χ^2 (df) = 1.29 (2), p = .53, CFI = 1.00, RMSEA = .00

Predicting from attachment with father



χ^2 (df) = .06 (2), p = .97, CFI = 1.00, RMSEA = .00

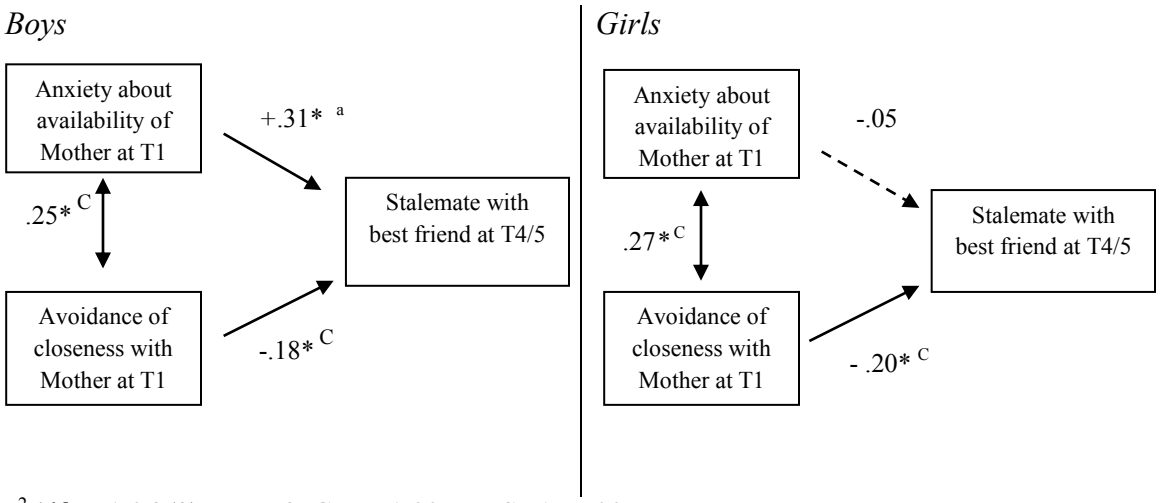
[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

* $p < .05$, $^{t}p < .10$

[C] Path constrained to be equal for boys and girls.

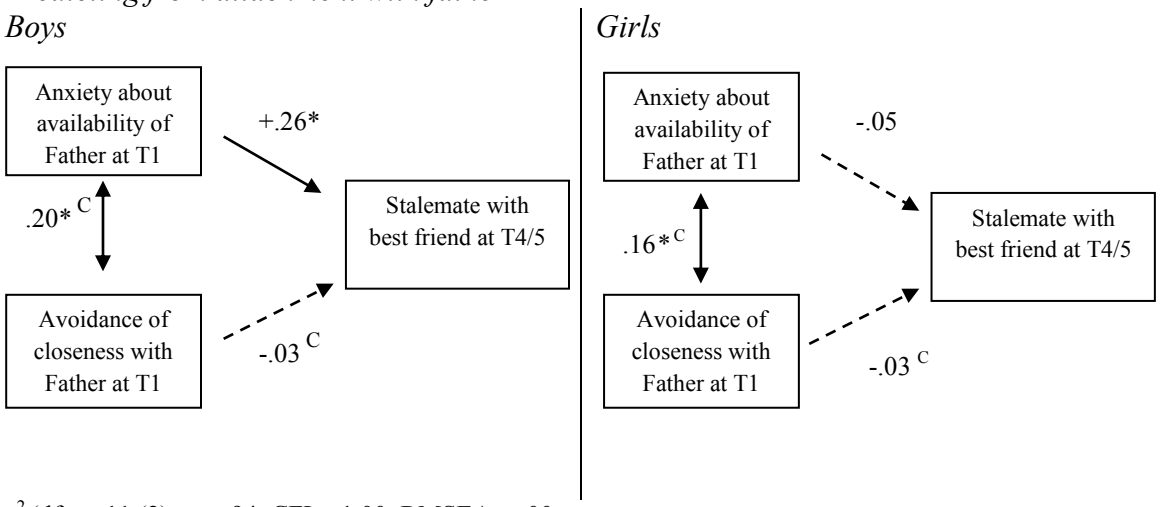
Figure B3: Direct models: Attachment insecurity predicting stalemate with best friend

Predicting from attachment with mother



χ^2 (df) = 1.06 (2), p = .59, CFI = 1.00, RMSEA = .00

Predicting from attachment with father



χ^2 (df) = .11 (2), p = .94, CFI = 1.00, RMSEA = .00

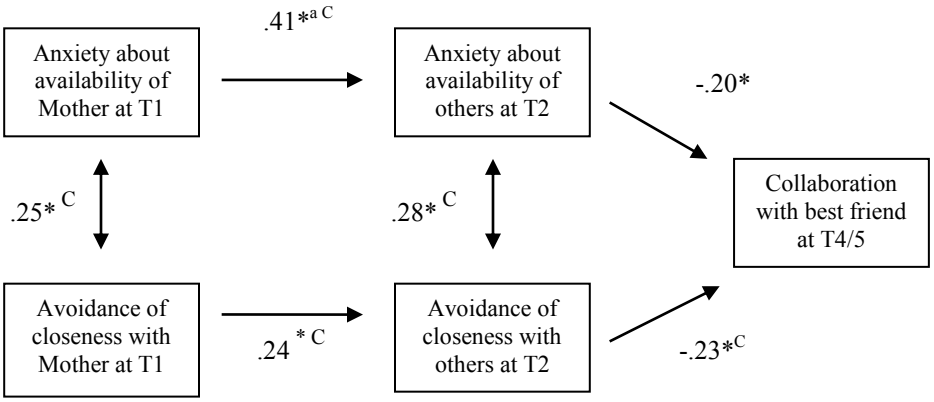
[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

* $p < .05$

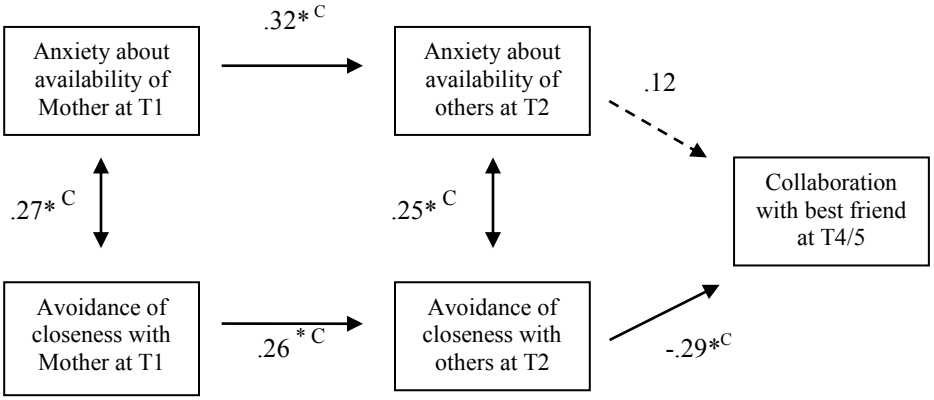
[C] Path constrained to be equal for boys and girls.

Figure B4: Indirect model: Attachment with mother predicts attachment with others in general, which predicts collaboration with best friend

Boys



Girls



χ^2 (df) = 10.48 (13), p = .65, CFI = 1.00, RMSEA = .00

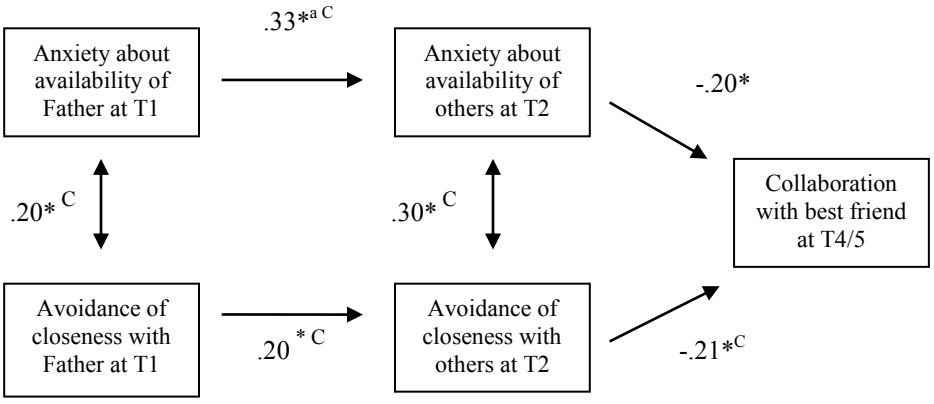
[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

* $p < .05$

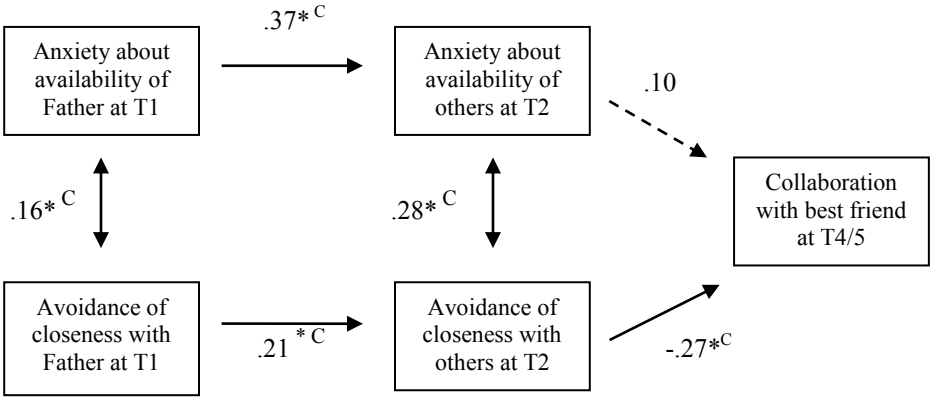
[C] Path constrained to be equal for boys and girls.

Figure B5: Indirect model: Attachment with father predicts attachment with others in general, which predicts collaboration with best friend

Boys



Girls



χ^2 (df) = 9.09 (13), p = .77, CFI = 1.00, RMSEA = .00 (Satorra-Bentler Scaled χ^2 (df) = 7. 50 (13), p = .87, CFI = 1.00, RMSEA = .00, Mardia's coefficient for girls = 6.01)

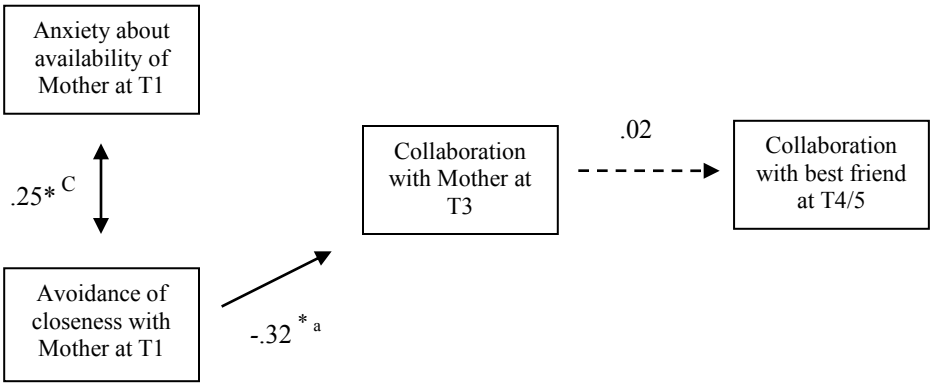
[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

* $p < .05$

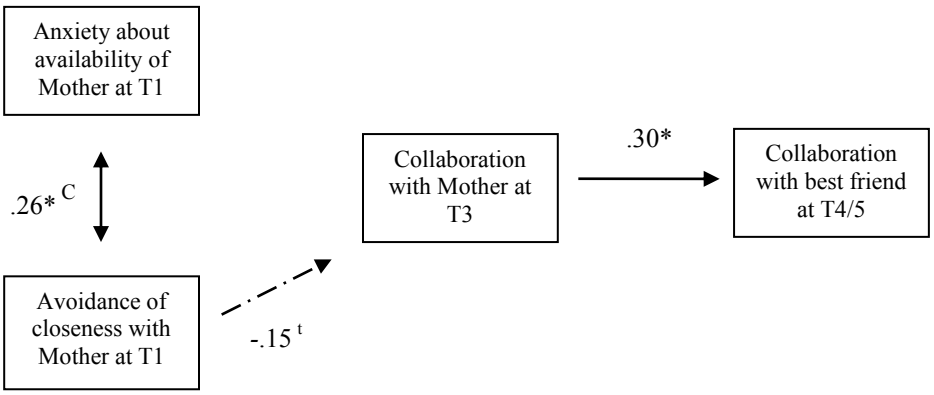
[C] Path constrained to be equal for boys and girls.

Figure B6: Indirect model: Avoidant attachment with mother tends to predict collaboration with mother, which predicts collaboration with best friend <u>for girls only</u>

Boys



Girls



χ^2 (df) = 7.13 (7), p = .42, CFI = 1.00, RMSEA = .01

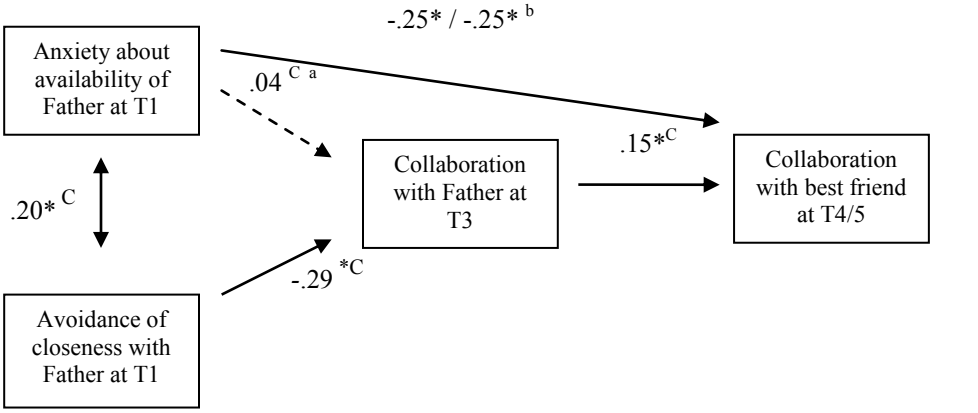
[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. *Paths nonsignificant for both genders were taken out of the model.* The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

* $p < .05$, [t] $p < .10$

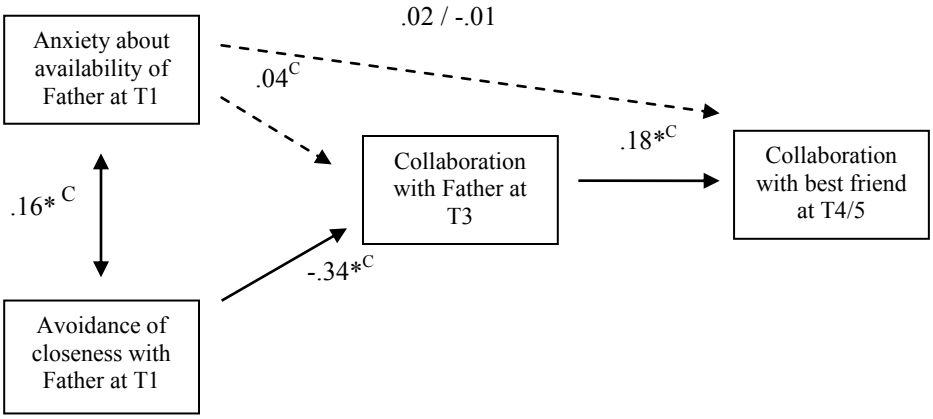
[C] Path constrained to be equal for boys and girls.

Figure B7: Collaboration with father does not mediate the relation (found for boys only) between anxious attachment with father and collaboration with best friend

Boys



Girls



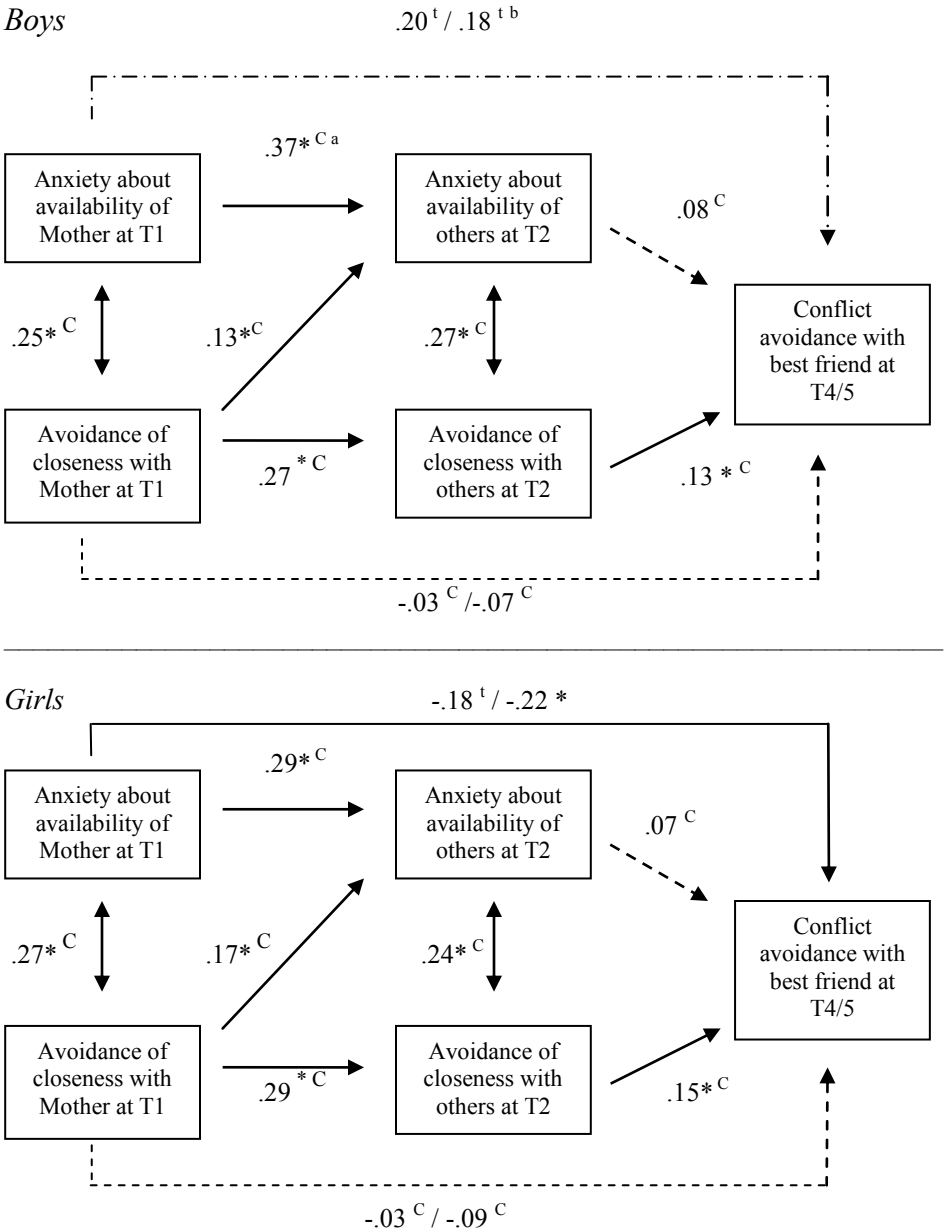
χ^2 (df) = 3.36 (4), p = .50, CFI = 1.00, RMSEA = .00.

[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

[b] For the direct paths from anxious attachment with father to collaboration with friend, the first standardized path coefficient is from the direct model and the standardized path coefficient after the slash is from the present model.

* $p < .05$, [C] Path constrained to be equal for boys and girls.

Figure B8: Attachment security with others does not mediate the relation between attachment with mother and conflict avoidance with best friend

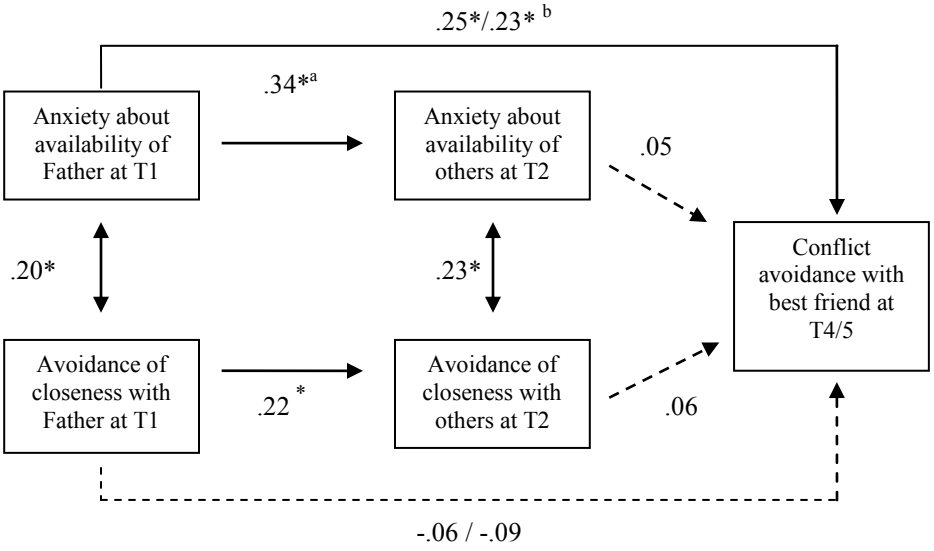


χ^2 (df) = 4.59 (10), p = .92, CFI = 1.00, RMSEA = .00. Model significantly *better* than model without direct paths ($\Delta \chi^2$ (Δdf) = 10.02 (3), p = .02), but not significantly better than the direct model ($\Delta \chi^2$ (Δdf) = 3.3 (8), p = .91).

[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests. [b] For the direct paths from attachment with mother to avoidance/capitulation with friend, the first standardized path coefficient is from the direct model and the standardized path coefficient after the slash is from the present model.

* $p < .05$, $^t p < .10$, ^{C} Path constrained to be equal for boys and girls.

Figure B9: <u>For boys only</u>: Anxious attachment with others in general does not mediate the relation between anxious attachment with father and conflict avoidance with best friend.



χ^2 (df) = .12 (2), p = .94, CFI = 1.00, RMSEA = .00

Model tended to be *better* than model without direct paths ($\Delta \chi^2$ (Δdf) = 4.89 (2), p = .09, 1-tailed) and could not be compared to the direct model in terms of model fit because both models had the same number of degrees of freedom.

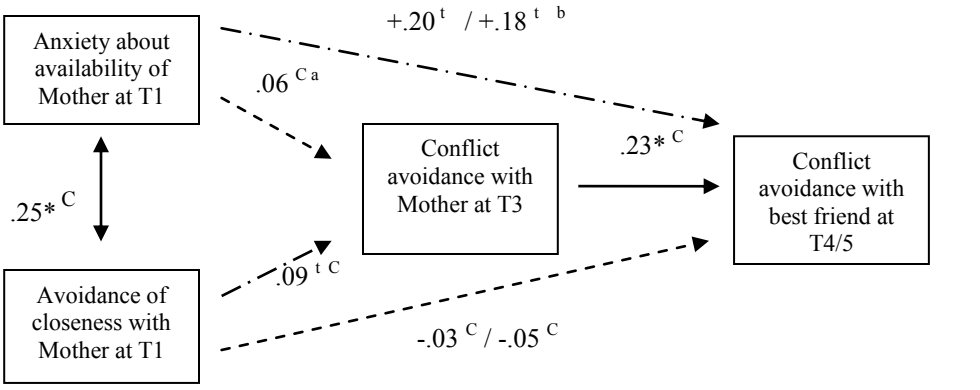
[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

[b] For the direct path from attachment with father to conflict avoidance with friend, the first standardized path coefficient is from the direct model and the standardized path coefficient after the slash is from the present model.

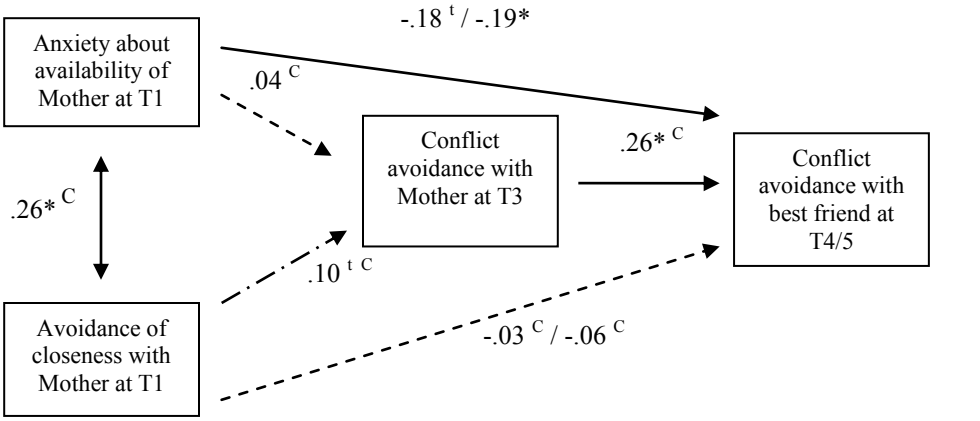
* $p < .05$

Figure B10: Conflict avoidance with mother does not mediate the relation between anxious attachment with mother and conflict avoidance with best friend

Boys



Girls



χ^2 (df) = 3.25 (5), p = .66, CFI = 1.00, RMSEA = .00.

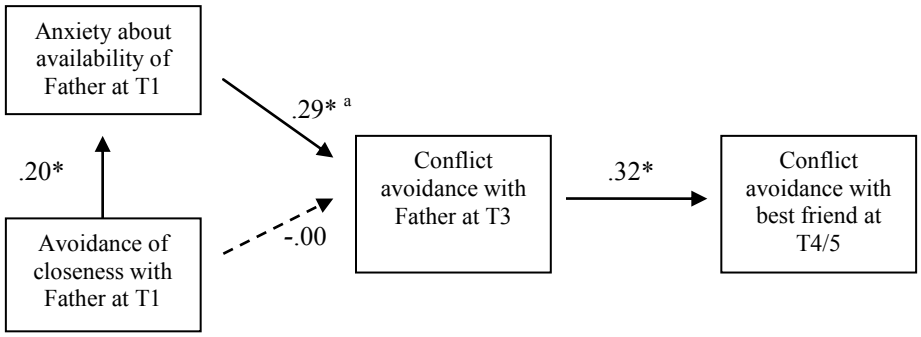
Model significantly *better* than model without direct paths ($\Delta \chi 2$ (Δdf) = 8.47 (3), p = .04, 1-tailed).

[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

[b] For the direct paths from attachment with mother to conflict avoidance with friend, the first standardized path coefficient is from the direct model and the standardized path coefficient after the slash is from the present model.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure B11: Indirect model <u>for boys only</u>: Anxious attachment with father predicts conflict avoidance with father, which in turn predicts conflict avoidance with best friend.



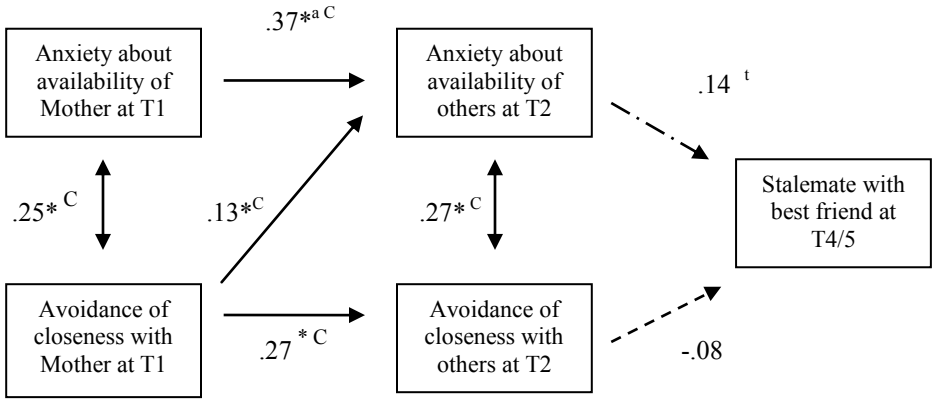
χ^2 (df) = 3.01 (2), p = .22, CFI = .95, RMSEA = .07

[a] All path coefficients are standardized, solid lines represent significant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

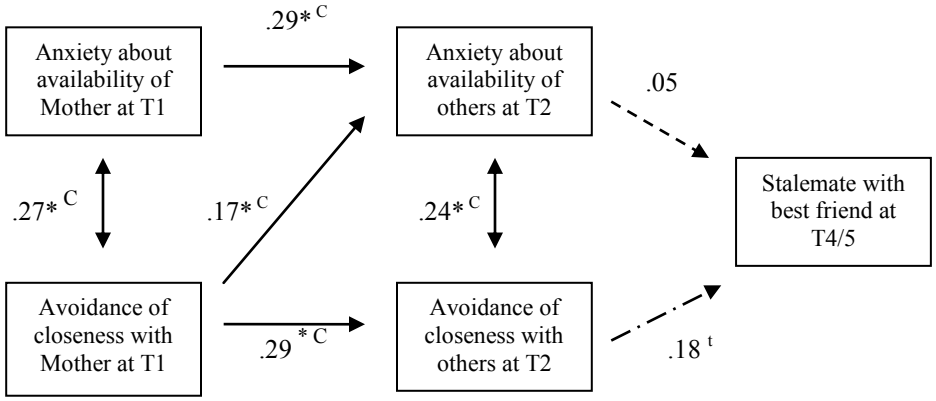
* $p < .05$, [t] $p < .10$

Figure B12: Indirect model: Attachment with mother predicts attachment with others in general, which tends to predict stalemate with best friend.

Boys



Girls



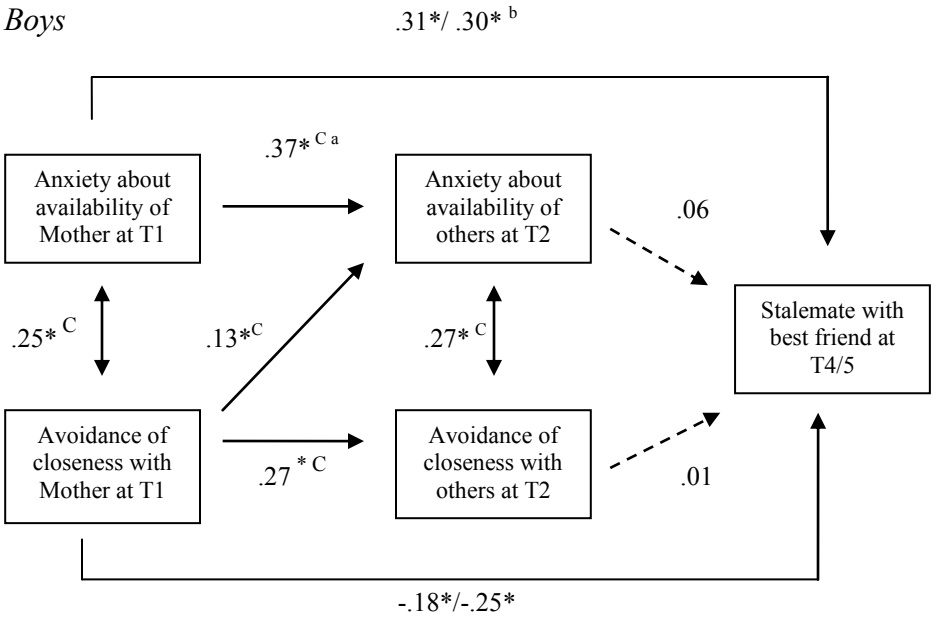
χ^2 (df) = 22.87 (11), p = .02, CFI = .87, RMSEA = .10

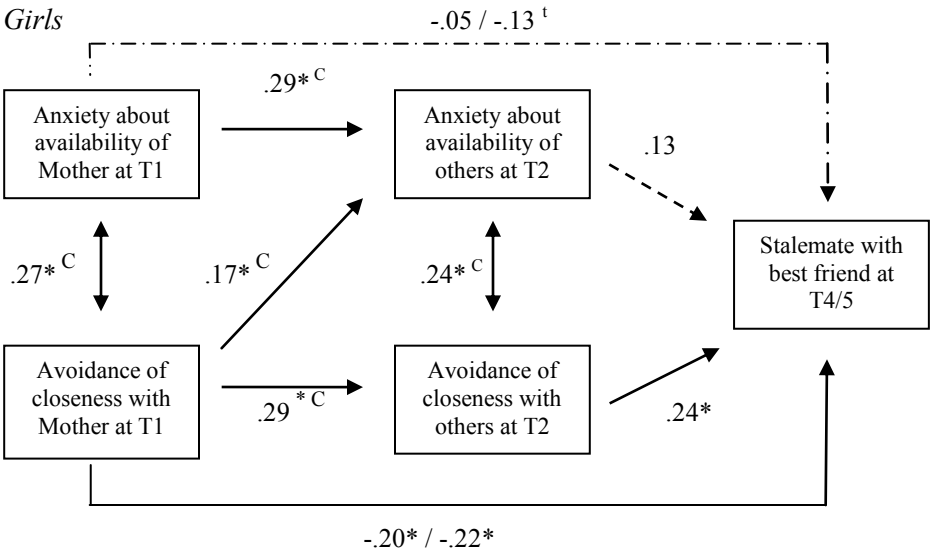
[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

* $p < .05$, $^t p < .10$

[C] Path constrained to be equal for boys and girls.

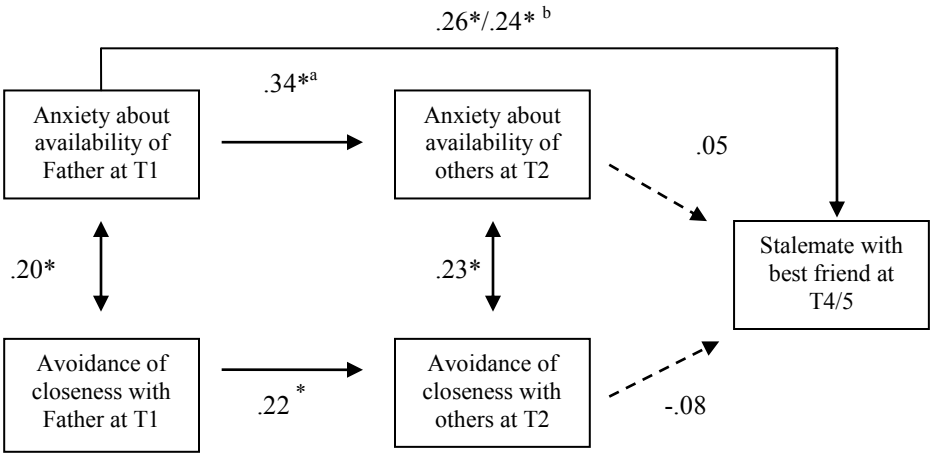
Figure B13: Attachment security with others does not mediate the relation between attachment with mother and stalemate with best friend





χ^2 (df) = 2.91(7), p = .89, CFI = 1.00, RMSEA = .00
Model significantly *better* than model without direct paths ($\Delta \chi^2$ (Δdf) = 19.96 (4), p = .001).
[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests. [b] For the direct paths from attachment with mother to stalemate with friend, the first standardized path coefficient is from the direct model and the standardized path coefficient after the slash is from the present model. * $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure B14: <u>For boys only</u>: Anxious attachment with others in general does not mediate the relation between anxious attachment with father and stalemate with best friend.



χ^2 (df) = .13 (3), p = .99, CFI = 1.00, RMSEA = .00

Model significantly *better* than model without the direct path ($\Delta\chi^2$ (Δdf) = 5.1 (1), p =.02, 1-tailed)

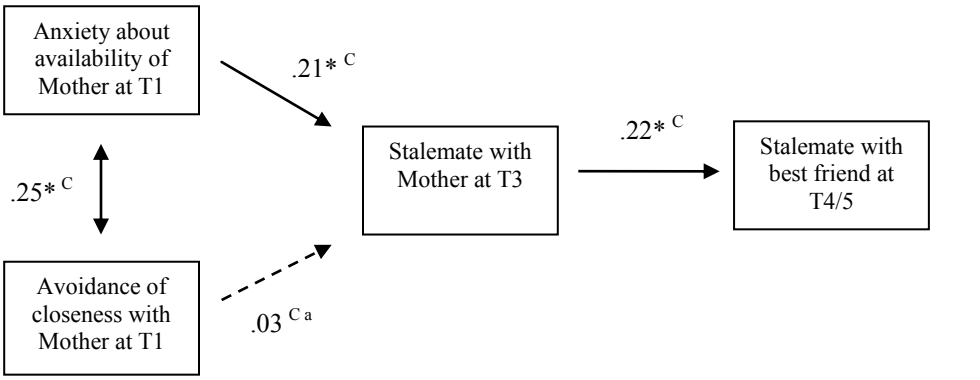
[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

[b] For the direct path from attachment with father to stalemate with friend, the first standardized path coefficient is from the direct model and the standardized path coefficient after the slash is from the present model.

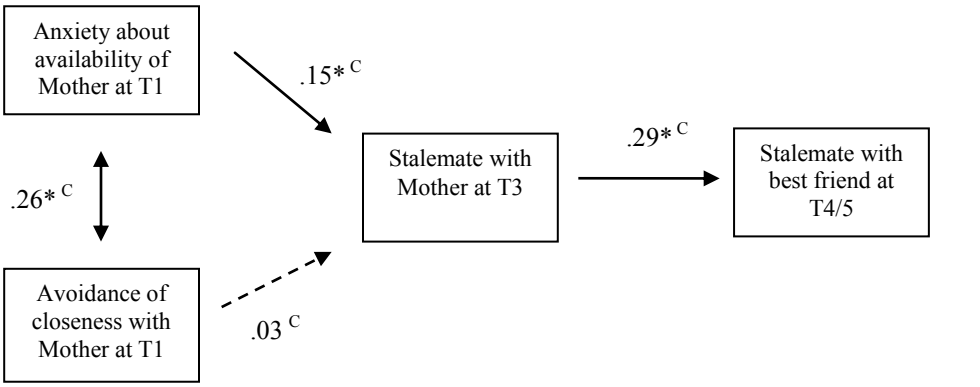
* $p < .05$, $^t p < .10$

Figure B15: Indirect model: Anxious attachment with mother predicts stalemate with mother, which predicts stalemate with best friend

Boys



Girls



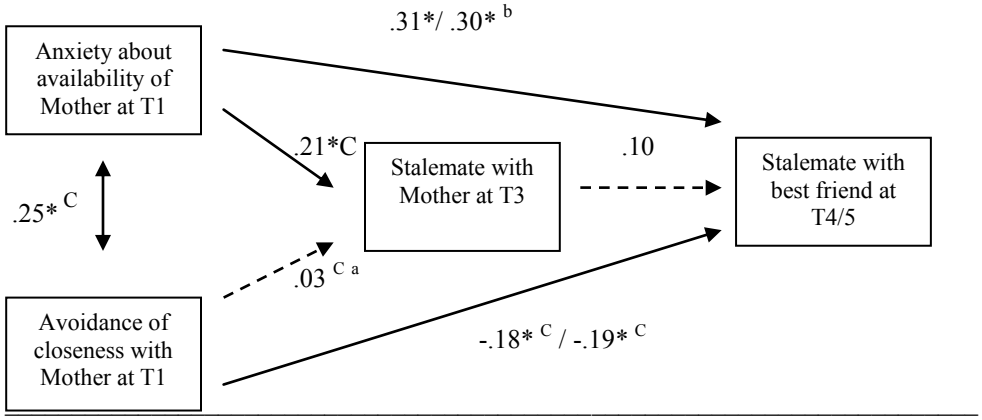
χ^2 (df) = 22.23 (7), p = .00, CFI = .64, RMSEA = .15

[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

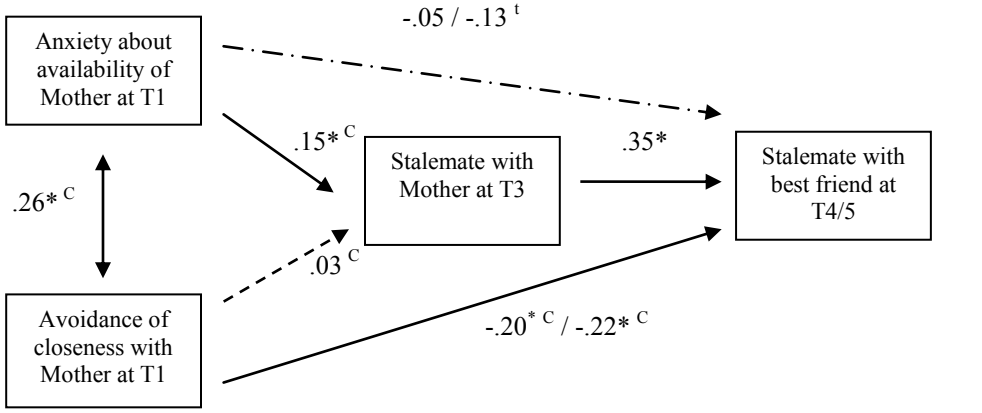
* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure B16: Stalemate with mother does not mediate the relation between attachment with mother and stalemate with best friend

Boys



Girls



χ^2 (df) = 2.56 (4), p = .63, CFI = 1.00, RMSEA = .00.

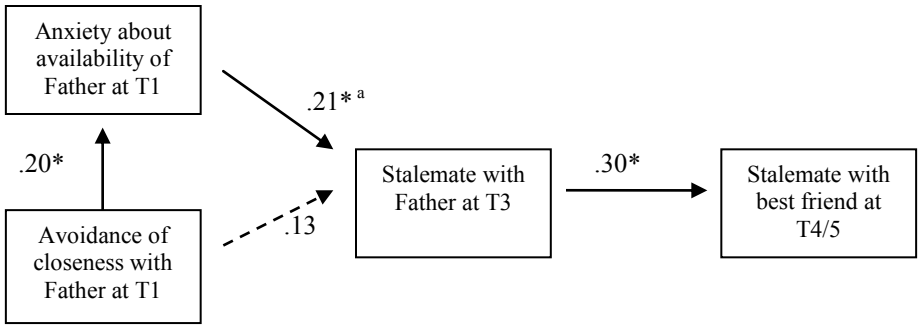
Model was significantly *better* than model without direct paths ($\Delta \chi^2$ (Δdf) = 19. 67 (3), p< .001, 1-tailed).

[a] All path coefficients are standardized, solid lines represent significant paths, dashed lines represent nonsignificant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

[b] For the direct paths from attachment with mother to stalemate with friend, the first standardized path coefficient is from the direct model and the standardized path coefficient after the slash is from the present model.

* $p < .05$, [t] $p < .10$, [C] Path constrained to be equal for boys and girls.

Figure B17:Indirect model <u>for boys only</u>: Anxious attachment with father predicts stalemate with father, which in turn predicts stalemate with best friend.



χ^2 (df) = 4.01 (2), p = .13, CFI = .89, RMSEA = .10

[a] All path coefficients are standardized, solid lines represent significant paths, dashed-dotted lines represent trends. The significance tests for all paths are 1-tailed, with the exception of the paths where no relation was hypothesized (i.e., anxious attachment to conflict avoidance, and avoidant attachment to stalemate), which were tested with 2-tailed tests.

* $p < .05$, [t] $p < .10$

Appendix B3: Additional results regarding testing mediation for stalemate with best friend

In testing attachment to others in general as a mediator of the relation between attachment with mother and stalemate with best friend, the indirect model fit the data poorly. With respect to the indirect path from anxiety with mother and stalemate with friend for boys, anxiety with mother significantly predicted general anxious attachment (standardized path coefficient = .37, $p < .05$), which in turn tended to predict stalemate with best friend (standardized path coefficient = .14, $p < .10$). With respect to the indirect path from avoidance with mother and stalemate with friend, avoidant attachment with mother predicted general avoidant attachment for both boys and girls (standardized path coefficients = .27, .29, both $p < .05$). However, whereas general avoidant attachment tended to predict stalemate with friend only for girls (standardized path coefficient = .18, $p < .10$), no relation between these two variables was found for boys (standardized path coefficient = -.08, *n.s.*). Thus, preconditions for the mediation of the anxiety – stalemate relation tended to be met for boys only, whereas the preconditions for the mediation of the avoidance – stalemate relation tended to be met for girls only.

For the indirect model with added direct paths testing general attachment as mediator of the relation between anxious attachment with mother and stalemate with best friend, a few findings are noteworthy. Interestingly, with the addition of this path to the model, boys' general anxious attachment no longer predicted stalemate with friend (standardized path coefficient = .06, *n.s.*). For girls, although the indirect paths between avoidance with mother and stalemate with friend continued to be significant, the direct

path actually increased in strength, now predicting 5% of the variance (standardized path coefficient = -.22, $p < .05$).

Appendix B4: Additional discussion regarding conflict avoidance

Although attachment avoidance in relationships in general seems to be related to conflict avoidance within a close friendship, avoidant attachment with parents was not found to have a direct effect. However, two indirect effects were noted for avoidant attachment with mother. That is, the more adolescents avoid closeness with mother, the more they avoid closeness in general, and the more they were avoidant in general, the more they avoided conflict with best friend. Similarly, the more adolescents avoided closeness with mother, the more they tended to avoid conflict with her, which in turn was positively linked with later conflict avoidance with best friend. Thus, avoidant attachment with mother seemed to have an indirect effect through general attachment avoidance and conflict avoidance with mother. In contrast, no indirect effect was present for avoidant attachment with father.

Appendix C

Letter to students and consent form

used in the first year of Study 1

(i.e., the third year of the larger longitudinal project)

Centre for Research in Human Development
Department of Psychology
tel: (514) 848-2424 Ext. 7560 fax: (514) 848-2815
JHSiii
October, 2003

Dear Student,

For the last two years, as you may remember, you participated in the Concordia Relationships and Well-being Project, telling us about your relationships, feelings and behaviour. **We are now writing to ask you to help us in the third phase of our study.**

This year we are asking you to complete questionnaires again during class time at school, at times convenient for your teacher. The total time will be about two class periods throughout the year. The questionnaires are mostly like last year, and ask about your relationships with parents and friends, how your family gets along, and how you feel and act (e.g., mood, helping others, making decisions, breaking rules, drug use, and sex). Of course, we keep all of your answers confidential

We really appreciate you helping us last year. **Your help again this year is very important** because we need to understand how changes in relationships affect students your age over time. **Besides, those students who choose to participate again this year will be entered in THE GRAND-PRIZE draw for a SONY DISCMAN !!!**

Please complete the enclosed consent form, and return it to your French teacher as soon as possible, e*ven if you say no*. Although we hope that you do, it is your choice whether or not to participate. **All students returning the form (whether answering "yes" or "no") will have their names entered in a draw for *Cineplex Odeon movie passes and HMV gift certificates!!***

If you have any questions feel free to call one of us at the numbers below.
Thanks a lot!

Clairneige Motzoi, B.A.
M.A. Candidate
(848-7560)

Anna-Beth Doyle, Ph.D.
Professor of Psychology
(848-7538)

Dorothy Markiewicz, Ph.D.
Professor of Psychology and
Applied Human Sciences
(848-2268)

Centre for Research in Human Development
Department of Psychology
tel: (514) 848-2424 ext 7560 fax: (514) 848-2815*

October 2003 (JHSiii)

Consent Form For Students To Participate in Research

Student's Name:_____

Student's Date of Birth:_____Age:_____

School: LCCHS Grade:_____ French Teacher's name/class:_____

Check where applicable:

_____ YES, I agree to **participate** in the Relationships and Well-being study conducted by Dr. Anna Beth Doyle, and Dr. Dorothy Markiewicz.
(Student please sign below).

_____ Before I agree to participate, please call me or my parents to discuss the project. Name_____ and phone number _____.

_____ NO, I do not agree to participate.

IF YOU AGREE TO THE STUDENT'S PARTICIPATION, please complete the following:

I have been informed that the purpose of the study is to understand students' relationships with family and peers, adjustment and well-being. Participation will involve approximately 1 ½ hours of class time during the year, completing questionnaires about friendships and family relationships, self-perceptions and emotional and behavioural adjustment. I understand that **all information will be confidential** to the research team and identified only by number, although if life-threatening circumstances are reported, the research team will legally have to break confidentiality. I understand that general results may be published. I also understand that the student may withdraw consent and may discontinue participation at any time.

Student's Signature:_____Date_____

Parent(s) Name(s)_____

Address_____

City & Postal Code_____ Phone Number_____

PLEASE RETURN THIS FORM TO YOUR FRENCH TEACHER AS SOON AS POSSIBLE.

Appendix D

Letter to students and consent form

used in the first year of Study 2

(i.e., the first year of the larger longitudinal project)

Center for Research in Human Development
Department of Psychology
Tel: (514) 848-7560
Fax: (514) 848-2815

November 2001

Dear Student,

We are writing to ask for your participation in the Concordia Relationships and Well-Being Project. With this project we hope to better understand how relationship quality with others helps adolescents, like you, deal with challenges in your life.

Your participation will help us a lot! We are asking you to complete questionnaires and a computer task at school. The questionnaires ask about your relationships with your parents and friends, other family relationships, and how you feel and act (e.g., breaking rules, drug use, mood, decision making, helpfulness to others). These questionnaires have often been used with adolescents like you. The computer task is about possible situations with parents and friends. You will be asked what you would think, do, and feel in these situations. The questionnaires and computer task will each take about one class period to complete, at a time that is convenient for your teacher.

Of course we keep all your answers confidential. We hope that you choose to participate; if so, please sign the consent form, have one of your parents sign it too, and return it to your French teacher as soon as possible. *Even if you say no*, please complete the top of the consent form, and return it. **All students returning the form (whether answering "yes" or "no") will have their names entered in a draw for *Cineplex Odeon movie passes and HMV gift certificates!!***

Our work is funded by the Social Sciences and Humanities Research Council of Canada, and is concerned with the development of adolescents' academic performance and social well-being. Because changes over time are important, we will ask you again in the next two years to complete similar questionnaires. However, you don't have to continue at that time if you don't want to.

If you (or your parents) have questions or wish further information to decide about participating, please indicate a convenient telephone number on the form so that we can call you. Also, please do not hesitate to call one of us at the numbers below. Thanks for your assistance.

Sincerely,

Daniela Pelle
Research Assistant
(848-7560)

Anna Beth Doyle, Ph.D.
Professor of Psychology
(848-7538)

Dorothy Markiewicz,Ph.D.
Professor of Applied Human Sciences and Psychology
(848-2268)

Centre for Research in Human Development
Department of Psychology
tel: (514) 848-7560 fax: (514) 848-2815

November 2001 (JHS-i)

Consent Form For Students To Participate in Research

Student's Name:_____

Student's Date of Birth:_____Age:_____

School: LCCHS Grade:_____ French Teacher's name/class:_____

Check where applicable:

_____ YES, my parent(s) and I agree to **my participation** in the Relationships and Well-being study conducted by Dr. Anna Beth Doyle, and Dr. Dorothy Markiewicz.
(Student and parent please sign below).

_____ Before my parent(s) or I agree to my participation, please call to discuss the project.
Name_____ and phone number _____.

_____ NO, my parent(s) or I do not agree to my participation.

IF YOU AGREE TO THE STUDENT'S PARTICIPATION, please complete the following:

We have been informed that the purpose of the study is to understand students' relationships with family and peers, and well-being. Participation will involve approximately 2 hours of the student's class time in the winter term, completing questionnaires about friendships and family relationships. Students will also answer questions on a computer about their thoughts and feelings in possible situations with parents and friends. We understand that **all information will be confidential** to the research team and identified only by number, although if life-threatening circumstances are reported, the research team will legally have to break confidentiality. We understand that the student may withdraw consent and may discontinue participation at any time.

Student's Signature: _____

Parent's Signature:_____Date_____

Parent(s) Name(s)_____

Address_____

City & Postal Code_____Phone Number_____

PLEASE RETURN THIS FORM TO YOUR FRENCH TEACHER AS SOON AS POSSIBLE.

Appendix E

General Information questionnaire

GENERAL INFORMATION

Please do not mark in this area

				1

This information will help us describe the participants in our study.

1. Age: ☐☐

   Date of Birth: DAY ☐☐ / MONTH ☐☐ / YEAR ☐☐

2. Sex: ☐ Female ☐ Male

3. Grade: ☐ 7 ☐ 8 ☐ 9 ☐ 10

4. My mom is (☒ one box) :

   ☐ Single ☐ Divorced
   ☐ Common-law ☐ Widowed
   ☐ Married ☐ Other
   ☐ Separated

5. My dad is (☒ one box) :

   ☐ Single ☐ Divorced
   ☐ Common-law ☐ Widowed
   ☐ Married ☐ Other
   ☐ Separated

6. Who lives in your house with you?
   (☒ all that apply)

   ☐ Mom ☐ Sisters/Stepsisters
   ☐ Dad ☐ Brothers/Stepbrothers
   ☐ Stepmom ☐ Other (Specify)
   ☐ Stepdad _____

7. I have ☐☐ sister(s)/stepsister(s).

8. I have ☐☐ brother(s)/stepbrother(s).

9. What is your mother tongue (first language)?

   ☐ English ☐ French ☐ Other (specify)

   _____

10. What languages do you speak at home?

    ☐ English ☐ French ☐ Other (specify)

    _____

11. My ethnic/cultural background is
    (☒ all that apply)

    ☐ English ☐ Asian
    ☐ French ☐ South-West Asian
    ☐ Aboriginal ☐ Middle Eastern
    ☐ African ☐ Latin American
    ☐ Other European ☐ Other (specify:)

    _____

12. I have lived in Canada ☐☐ year(s).

13. Performance in academic subjects.
    (☒ *a box for each subject that you take)*

    a. English

    ☐ **Failing** ☐ **Below Average** ☐ **Average** ☐ **Above Average**

    b. History or Social Studies

    ☐ **Failing** ☐ **Below Average** ☐ **Average** ☐ **Above Average**

    c. Mathematics

    ☐ **Failing** ☐ **Below Average** ☐ **Average** ☐ **Above Average**

    d. Science

    ☐ **Failing** ☐ **Below Average** ☐ **Average** ☐ **Above Average**

Appendix F

Marlow-Crowne Social Desirability Questionnaire

MC-SD

Please do not mark in this area

				1

For the following questions, please ☒ "T" for True and "F" for False.	True	False
1. It is sometimes hard for me to go on with my work if I am not encouraged.	☐ T	☐ F
2. I sometimes feel resentful when I don't get my way.	☐ T	☐ F
3. On a few occasions, I have given up doing something because I thought too little of my ability.	☐ T	☐ F
4. I like to gossip at times.	☐ T	☐ F
5. There have been times when I felt like rebelling against people in authority even though I knew they were right.	☐ T	☐ F
6. No matter who I'm talking to, I'm always a good listener.	☐ T	☐ F
7. There have been occasions when I took advantage of someone.	☐ T	☐ F
8. I'm always willing to admit it when I make a mistake.	☐ T	☐ F
9. I sometimes try to get even, rather than forgive and forget.	☐ T	☐ F
10. I am always courteous, even to people who are disagreeable.	☐ T	☐ F
11. At times I have really insisted on having things my own way.	☐ T	☐ F
12. I have never been annoyed when people expressed ideas very different from my own.	☐ T	☐ F
13. There have been times when I was quite jealous of the good fortune of others.	☐ T	☐ F
14. I am sometimes irritated by people who ask favours of me.	☐ T	☐ F
15. I have never deliberately said something that hurt someone's feelings.	☐ T	☐ F

Appendix G

Experiences in Close Relationships Questionnaire

General version

EXPERIENCES IN CLOSE RELATIONSHIPS

Please do not mark in this area

					2

The following statements concern how you feel in your closest relationships (e.g., parents, best friends, romantic partners, etc). We are interested in how you **generally** experience your **closest relationships**, not just in one type of relationship, or at one point in time. Respond to each statement by indicating how much you agree or disagree with it. Mark an ☒ in the box that corresponds to your choice. Use the following scale:

1	2	3	4	5	6	7
Disagree Strongly			**Neutral/ Mixed**			**Agree Strongly**

1. I worry about being abandoned.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
2. I am very comfortable being close to others.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
3. I worry a lot about my relationships with others.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
4. I worry that people won't care about me as much as I care about them.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
5. I get uncomfortable when others want to be very close.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
6. I worry a lot about losing people I am close to.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
7. I don't feel comfortable opening up to others.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
8. I often wish that other peoples' feelings for me were as strong as my feelings for them.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
9. I want to get close to others, but I keep pulling back.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
10. I am nervous when others get too close to me.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
11. I worry about being alone.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
12. I am comfortable sharing my private thoughts and feelings with others I am close to.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
13. I try to avoid getting too close to people.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7

Disagree Strongly **Neutral/ Mixed** **Agree Strongly**

1 2 3 4 5 6 7

Please do not mark in this area

						2

1	2	3	4	5	6	7
Disagree Strongly			Neutral/ Mixed			Agree Strongly

14. I need a lot of reassurance that I am loved by others.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
15. I find it relatively easy to get close to other people.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
16. If I can't get people I am close with to pay attention to me, I get upset or angry.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
17. I find that people don't want to get as close as I would like.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
18. I usually talk about my problems and concerns with people I am close to.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
19. When I don't have any close relationships, I feel a bit anxious and insecure.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
20. I don't mind asking people I am close to for comfort, advice, or help.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
21. It helps to turn to people I am close to in times of need.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
22. When people I am close to disapprove of me, I feel really bad about myself.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
23. I turn to people I am close to for many things, including comfort and reassurance.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
24. I feel angry when people I am close to spend time away from me.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7

Disagree Strongly			Neutral/ Mixed			Agree Strongly
1	2	3	4	5	6	7

Appendix H

Experiences in Close Relationships Questionnaire

Mother version

EXPERIENCES WITH MOTHER (ECRM)

Please do not mark in this area

				3

Order ☐1 ☐2

If you have both a mom and a stepmom, tell us about the one most important to you.
If you don't have a mom or stepmom, just leave this blank and go to the next questionnaire.

Please tell us who you are thinking of when you fill out this questionnaire (☒ one box):

☐ Mom OR ☐ Stepmom

Think about your relationship with your (step)mother. Now read each statement below and indicate how much each describes your feelings with your (step)mother. Respond how you generally feel with your (step)mother.
Put an ☒ in the box with the number that is true for you.

	1	2	3	4	5	6	7
	Disagree Strongly			**Neutral/ Mixed**			**Agree Strongly**
1. I worry about being abandoned by my mother.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
2. I am very comfortable being close to my mother.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
3. I worry a lot about my relationship with my mother.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
4. I worry that my mother doesn't care about me as much as I care about her.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
5. I get uncomfortable when my mother wants to be very close.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
6. I worry a lot about losing my mother.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
7. I don't feel comfortable opening up to my mother.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
8. I often wish that my mother's feelings for me were as strong as my feelings for her.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
9. I want to be close to my mother, but I keep pulling back.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
10. I am nervous when my mother gets too close to me.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
11. I worry about being without my mother.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
12. I am comfortable sharing my private thoughts and feelings with my mother.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
13. I try to avoid getting too close to my mother.	☐1	☐2	☐3	☐4	☐5	☐6	☐7

Disagree Strongly			**Neutral/ Mixed**			**Agree Strongly**
1	**2**	**3**	**4**	**5**	**6**	**7**

EXPERIENCES WITH MOTHER (ECRM)

Please do not mark in this area

						3

	1	2	3	4	5	6	7
	Disagree Strongly			Neutral/ Mixed			Agree Strongly
14. I need a lot of reassurance that I am loved by my mother.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
15. I find it relatively easy to be close to my mother.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
16. If I can't get my mother to pay attention to me, I get upset or angry.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
17. I find that my mother doesn't want to get as close as I would like.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
18. I usually talk about my problems and concerns with my mother.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
19. Without my mother, I feel a bit anxious and insecure.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
20. I don't mind asking my mother for comfort, advice, or help.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
21. It helps to turn to my mother in times of need.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
22. When my mother disapproves of me, I feel really bad about myself.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
23. I turn to my mother for many things, including comfort and reassurance.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
24. I feel angry when my mother spends time away from me.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7

	1	2	3	4	5	6	7
	Disagree Strongly			Neutral/ Mixed			Agree Strongly

Appendix I

Experiences in Close Relationships Questionnaire

Father version

EXPERIENCES WITH FATHER (ECRD)

Please do not mark in this area

				3

Order 1 2

If you have both a dad and a stepdad, tell us about the one most important to you.
If you don't have a dad or stepdad, just leave this blank and go to the next questionnaire.

Please tell us who you are thinking of when you fill out this questionnaire (☒ one box):

☐ Dad OR ☐ Stepdad

Think about your relationship with your (step)father. Now read each statement below and indicate how much each describes your feelings with your (step)father. Respond how you generally feel with your (step)father. **Put an ☒ in the box with the number** that is true for you.

	1 Disagree Strongly	2	3	4 Neutral/ Mixed	5	6	7 Agree Strongly
1. I worry about being abandoned by my father.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
2. I am very comfortable being close to my father.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
3. I worry a lot about my relationship with my father.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
4. I worry that my father doesn't care about me as much as I care about him.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
5. I get uncomfortable when my father wants to be very close.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
6. I worry a lot about losing my father.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
7. I don't feel comfortable opening up to my father.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
8. I often wish that my father's feelings for me were as strong as my feelings for him.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
9. I want to be close to my father, but I keep pulling back.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
10. I am nervous when my father gets too close to me.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
11. I worry about being without my father.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
12. I am comfortable sharing my private thoughts and feelings with my father.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
13. I try to avoid getting too close to my father.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7

Disagree Strongly			Neutral/ Mixed			Agree Strongly
1	2	3	4	5	6	7

Please do not mark in this area

						3

1	2	3	4	5	6	7
Disagree Strongly			Neutral/ Mixed			Agree Strongly

14. I need a lot of reassurance that I am loved by my father.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
15. I find it relatively easy to be close to my father.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
16. If I can't get my father to pay attention to me, I get upset or angry.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
17. I find that my father doesn't want to get as close as I would like.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
18. I usually talk about my problems and concerns with my father.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
19. Without my father, I feel a bit anxious and insecure.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
20. I don't mind asking my father for comfort, advice, or help.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
21. It helps to turn to my father in times of need.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
22. When my father disapproves of me, I feel really bad about myself.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
23. I turn to my father for many things, including comfort and reassurance.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
24. I feel angry when my father spends time away from me.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7

Disagree Strongly			Neutral/ Mixed			Agree Strongly
1	2	3	4	5	6	7

Appendix J

Conflict and Problem Solving Scale

CONFLICTS AND PROBLEM-SOLVING SCALE

Please do not mark in this area

				3

Once in a while, we all disagree with people we are close to. We would like to know how you deal with conflict in your relationship with **your (step)mom, your (step)dad,** and **your closest best friend**.

Please indicate how often YOU use each strategy, by making an ☒ in the box that is most true for you.

If you live in more than one home, **tell us about the parents in the home you live in the most.**

Put the initials of your closest best friend here: ☐☐

When dealing with conflict with your (step)mom, (step)dad, or best friend, how often do YOU:

1. Talk it out with the other person.

	Never	Rarely	Sometimes	Often
(Step)Mom:	☐	☐	☐	☐
(Step)Dad:	☐	☐	☐	☐
Friend:	☐	☐	☐	☐

2. Listen to the other's point of view.

	Never	Rarely	Sometimes	Often
Mom:	☐	☐	☐	☐
Dad:	☐	☐	☐	☐
Friend	☐	☐	☐	☐

3. Try to reason with the other.

	Never	Rarely	Sometimes	Often
Mom:	☐	☐	☐	☐
Dad:	☐	☐	☐	☐
Friend:	☐	☐	☐	☐

4. Try to find a solution that meets both of our needs equally.

	Never	Rarely	Sometimes	Often
Mom:	☐	☐	☐	☐
Dad:	☐	☐	☐	☐
Friend:	☐	☐	☐	☐

5. Compromise, meet the other half way, "split the difference".

	Never	Rarely	Sometimes	Often
Mom:	☐	☐	☐	☐
Dad:	☐	☐	☐	☐
Friend:	☐	☐	☐	☐

6. Give in to the other's viewpoint to escape argument.

	Never	Rarely	Sometimes	Often
Mom:	☐	☐	☐	☐
Dad:	☐	☐	☐	☐
Friend:	☐	☐	☐	☐

7. Try to ignore the problem, avoid talking about it.

	Never	Rarely	Sometimes	Often
Mom:	☐	☐	☐	☐
Dad:	☐	☐	☐	☐
Friend:	☐	☐	☐	☐

8. Change the subject.

	Never	Rarely	Sometimes	Often
Mom:	☐	☐	☐	☐
Dad:	☐	☐	☐	☐
Friend:	☐	☐	☐	☐

Please do not mark in this area

				3

When dealing with conflict with your (step)mom, (step)dad, or best friend, how often do YOU:

9. Leave the room.

(Step)Mom: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

(Step)Dad: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

Friend: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

10. Interrupt/don't listen to the other.

Mom: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

Dad: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

Friend: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

11. Complain, bicker without really getting anywhere.

Mom: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

Dad: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

Friend: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

12. Raise voice, yell, shout.

Mom: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

Dad: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

Friend: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

13. Sulk, refuse to talk, give the "silent treatment".

Mom: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

Dad: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

Friend: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

14.Withdraw love or affection.

Mom: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

Dad: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**

Friend: ☐ **Never** ☐ **Rarely** ☐ **Sometimes** ☐ **Often**